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January
1932

Electrical Contracting

With Which Is Incorporated
The Electragist

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Eliminates unsafe "bootleg" extensions.

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**2 new
COMMERCIAL
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These will be marketed exclusively through the wholesale
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electrical contracting

VOLUME 31

WITH WHICH IS INCORPORATED THE ELECTRAGIST

NUMBER 3

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Resale Price News

Prices have again taken a downward trend as will be noted this month in the Resale Price Section. Price reductions have been made on the following:

- Bushings and locknuts
- All rubber cord
- ½-in. black conduit
- Erickson Couplings, reducers
- Soldering lugs
- Several types of standard rosettes
- Standard base husk and reflector type sockets
- Intermediate base sockets
- Mogul sockets
- Pendant switches
- No. 14 rubber covered wire
- Weatherproof wire.

The listing on made up extension cords has been reduced and includes only the commonly used lengths. Belden and Cutler-Hammer made up extension cords have been added.

Two new types of Sangamo time switches have been added on PL-28.

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CHARLES W. FORBRICH, Vice-Pres. EDGAR KOBAK, Sec.-Treas.
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Cherry 2440

Light enables night to enhance the beauty of this college tower

The floodlighting of architectural masterpieces, office buildings, construction work and other exteriors is an ever-increasing source of revenue for the electrical contractor.

This PERMAFLECTOR installation—the tower at Westminster College, New Wilmington, Pa., is a fine example of scientific floodlighting.

PERMAFLECTOR permanence and brilliance are available also for show window, cove and indirect lighting.

Every PERMAFLECTOR carries the 10-year guarantee. Less than one in 100,000 of all the hundreds of thousands installed have ever had to be replaced because of tarnishing or because of the silvered reflecting surface cracking, checking or peeling. PERMAFLECTORS stay bright.

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304 Ross Street Pittsburgh, Pa.



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FLOOD LIGHTING

in review

AS this is written a year is coming to a close and one instinctively looks back in review. What kind of a year has it been? Has it brought anything of value which is of more than passing interest?

Sometimes the immediate events are of such pressing importance at the time that we are apt to lose our perspective. Of 1931, for instance, the average man would have little or nothing good to say and yet the big things of 1931 are not the losses of the depression, or the unemployment and suffering, poignant as they may have been at the time. They are only temporary.

The big thing that comes out of the ruins of 1931 is the return of the nation to work and to serious consideration of fundamental economic values.

For a decade American industry had gone through a "whoopie" era—business was booming, expansion was in the air. And the electrical industry was as bad if not worse than the others.

BEFORE the war the electric utilities were not "cocky." The industry in fact was almost afraid of its shadow.

However, as the light and power company stocks began to take a leading position on the stock exchange boards, prosperity whispered in the ears of utility managers that whatever they did was right and let the rest of the industry "lump it if they did not like it."

Well, they did not like it nor did they lump it. Oklahoma and Kansas provided the battle-grounds and the utilities learned that it is better to work with than without your industry.

FOR years ELECTRICAL CONTRACTING has been calling the attention of the industry to the menace of the loss of a market such as the unwired home. Nothing was done to attempt to replace it. Everybody was busy, so why bother?

Well, the same people were not so busy in 1931 and steps were taken to rectify that situation.

The work started in 1931 is but a beginning. As it gains momentum the results will far outweigh the losses of a year or two.

Another subject that has been prominent in ELECTRICAL CONTRACTING's editorial preachments has been the need for creating a public demand for more adequate and better wiring.

1931 saw the beginning of some excellent local co-operative work in this connection in a number of cities. Besides three or four groups of manufacturers of electrical devices started a cooperative market development campaign.

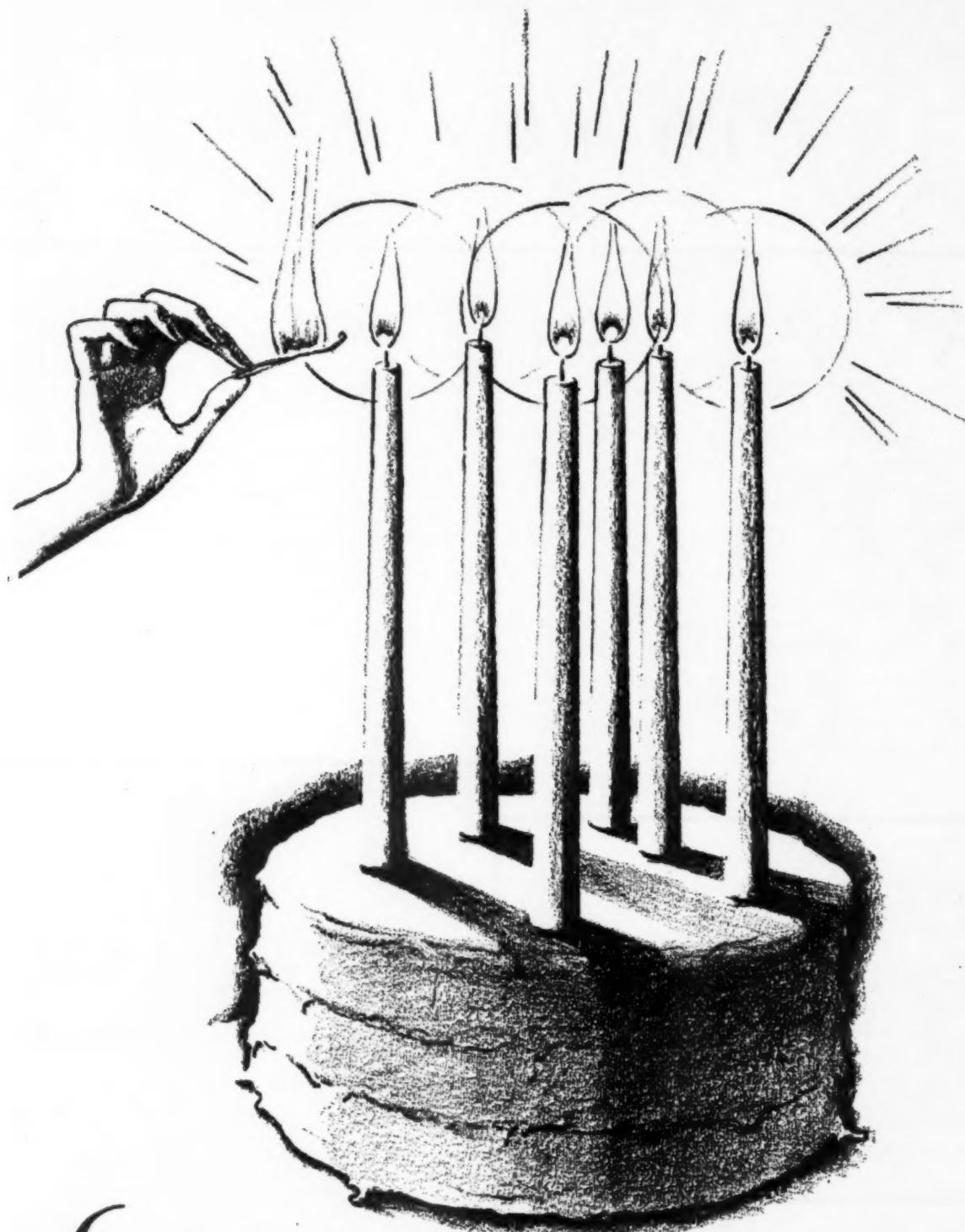
These 1931 endeavors will not die out—they are bound to point the way to more and more of this work.

IN the ten years of the big boom there was little time for important equipment development work. In 1931 every live manufacturer was busy working on some new device with which to recapture some of his lost volume. This is stimulating and the more of it that is done, the greater will be the amount of business available for electrical modernization.

AND, so as we summarize 1931 the big thing that stands out is the rebirth of the electrical industry into a sales-minded industry.

Utilities are looking for ways to work with their dealers and contractors in sales campaigns, manufacturers are working with each other to develop markets, wholesalers are studying markets and how to reach them, contractors are learning that the survivors of this period are those who sell.

For once, then, every branch of the industry is selling—1931 opened the ELECTRICAL SELLING AGE.



6 YEARS OLD
..63 YEARS IN BUSINESS



In 1869, Gray and Barton; in 1882, Western Electric Supply Department; since January 1, 1926, GRAYBAR


VOLUME 31
NUMBER 3

electrical contracting

IN WHICH IS INCORPORATED THE ELECTRAGIST

JANUARY
1932

grasshoppers



by
**JOHN
WISE**

JUST got a line on a fast one pulled by a Middle West farmer that not only has helped to renew my faith in the ability of the average man to think for himself in times of stress and make something out of nothing, but has given me courage for the New Year.

In normal times we know that business is more or less shoved at us, and we can let selling sort of slide to concentrate on supervision. But when things are tight and jobs are as scarce as hen's teeth, the only way to save something out of the wreck is to seek out work, no matter how small.

The farmer I have mentioned had a fine, big grain farm and the early summer found him, like his neighbors, gazing fondly out over a set of crops that looked like a big yield. But, sad to say, it was too good to be true. Along came the grasshoppers, and when I say grasshoppers, I don't mean an occasional buzz of wings and a big bow-legged tobacco-chewer staring at you from a waving weed. No, sir! I mean billions on billions of the pests, shutting out the light of day and descending on the grain and grass like a destroying angel, leaving nothing in their wake except bareness.

Can you imagine the feelings of that farmer as he turned his gaze from his wasted fields to the old home where the wife and kids were trying to carry on and make the best of the disaster? Picture yourself with all your year's income and your savings swept away in a few days, a bleak winter ahead and the prospects so hopeless that it hardly seems worth while to begin all over again.

Unfortunately, what farmers do to glean a bit of profit out of ruin gets scant mention in the public press, so it was not until recently that this fellow's stunt came to light. Some one was sympathizing with him about the destruction of his crops by the "hoppers."

"Well," he replied, rubbing his chin, "The dirty little cusses gobbled up my grain all right, but I didn't lose everything. I've got two and a half tons of the finest grasshoppers you ever saw in my barn and I'm using 'em and selling 'em for chicken-feed! They oughter be A-1 Prime with all that cereal inside 'em!"

Now, I know that a lot of electrical contractors have felt as though the bottom had just dropped out of everything and that there just wasn't any sense trying. Then there have been others, like this farmer, who would rather try something than sit around thinking of the depression. Those fellows aren't going to be afraid of the New Year.

As I see it, there'll be opportunities for electrical contractors in 1932. They may not be as big as they used to be and they may not be as apparent, but they'll be there just the same. The only difference that I can see is that in 1932 we've got to use our common sense a little bit more and try to recognize and take advantage of those opportunities we do have.



/// ONE HUNDRED MILLION DOLLARS

BY S. B. WILLIAMS,
EDITOR AND GENERAL MANAGER
ELECTRICAL CONTRACTING

TEN years ago electric refrigeration was almost unheard of in the home. Few farms were being wired. The sun lamp had not come on the market. Outdoor lighting for sports was almost unknown. Public address systems were still an experiment. There was no electric eye, no house-cooling system, no oil burners, no radio wiring, no electric clocks. Rewiring, reinspection, additional outlets, and adequacy had not been thought of.

Ten years ago the number of electrical contractors was virtually the same as it is today.

Ten years ago, however, we were getting into the swing of the big building boom which was to take the country out of the 1921 depression. To offset that

building market 1932 offers a series of markets for wiring that did not exist ten years ago. Before the year is over it is quite possible that others might be opened.

On the next two pages are briefly stated some outstanding wiring opportunities for 1932. The estimates are not intended to be exact and should not be used for the purpose of establishing quotas. Moreover, the estimates have purposely been made as conservative as possible, so as not to build up any false hopes. The figures, however, aggregate more than one hundred million dollars, and serve to indicate that the market for wiring is far from being on its last legs and that there are opportunities for those who would take them.

The only real difference between 1932 and 1922 is that a decade ago business came to the electrical contractor, while today if he wants the business he must seek it out.

There used to be a million or more new customers added to the lines of the power companies each year. In 1931 the number was hardly a quarter of that figure. This condition, more than all the talk of the years gone by, has focused the attention of the industry on the need for selling.

In 1932 there will be national market development plans in progress on electric refrigeration, electric ranges, sun lamp lighting, residential lighting and perhaps some others which are now being discussed.

In 1932, if present indications mean anything, more utilities will try to bolster up the residential market by working in cooperation with the contractors to sell more wiring.

In 1932, more contractor associations, encouraged by the successes of 1931, will undertake to awaken a public demand for more and better wiring.

Only the contractors who can sell and are selling, who perform a service based on something other than mere price, are surviving this depression. This is the dawn of the day of the selling contractor and with 1932 the wiring business goes commercial.

COMMODITY	MARKET INFORMATION	The Wiring Market
ELECTRIC RANGES	The 1932 quota for the NEMA-NELA 3-year Range Promotion Campaign, if it goes through, is 225,000 ranges. Because it may get off to a late start it would be safer to estimate 175,000 ranges as the 1932 business.	\$8,550,000
ELECTRIC REFRIGERATION (Domestic)	The National Refrigeration Program will be carried on for another year with the same quota as in 1931, namely, 1,000,000 residential electric refrigerators.	\$11,000,000
FARM ELECTRIFICATION	In spite of lower prices for farm products there appears to be a very healthy market for farm wiring. The economy of electricity is apparently appealing very strongly to the farmer. It has been estimated that between 50,000 and 100,000 farms will be wired in 1932—average is 75,000. Wiring costs, including fixtures, average around \$300.00 per farm, exclusive of high-line costs.	\$22,500,000
TIME SWITCHES	Estimates vary from 50,000 to 800,000 time switches as the market in 1932. The purely contractor market is probably nearer the 50,000 unit mark. The estimates give a minimum of \$15.00 per switch for wiring, and \$25.00 for the switch.	\$2,000,000
SUN LAMPS	A co-operative market development campaign has been put in motion by the manufacturers. This will result in business from the new building, of course, but the most important market must be that of replacement. This market has been divided into three parts with the following estimates: (1) Dual purpose (30,000 units).....\$3,350,000 (2) Home (100,000 units).....4,000,000 (3) Poultry farms (110,000 units).....2,005,000	\$9,355,000 (includes cost of unit)

COMMODITY	MARKET INFORMATION	The Wiring Market																
OUTDOOR LIGHTING	<p>This is a market which has proved very remunerative to the contractor. Each year new uses catch the public fancy with the result that any estimate made here may easily fall far short of the actual total before the year is over. This lighting is mostly for sports, but there are numerous other uses which account for a considerable volume. The several fields may be listed as follows:</p> <table><tr><td>Athletic Fields 1,000 Fields to be Lighted Total Business \$1,000,000</td><td>Golf Driving Ranges 1,000 Ranges Total Business \$1,500,000</td></tr><tr><td>Baseball Fields 4 Stadiums 60 Minor Leagues 75 Semi-Pro & Municipal Total Business \$2,150,000</td><td>Major Golf Courses Twenty-five 9-hole Courses Total Business \$500,000</td></tr><tr><td>Beaches 100 Municipal 100 Summer Resorts Total Business \$800,000</td><td>Pitch and Putt Golf 500 Courses Total Business \$2,500,000</td></tr><tr><td>Football 100 School Fields 50 Municipal Fields Total Business \$750,000</td><td>Playgrounds 600 to be Lighted Total Business \$600,000</td></tr><tr><td>Garden Lighting 100 Home Gardens Total Business \$20,000 100 Municipal and Large Estates Total Business \$100,000</td><td>Race Tracks 31 Tracks to be Lighted Total Business \$240,000</td></tr><tr><td></td><td>Swimming Pools 100 Underwater Lighting Total Business \$500,000 150 Overhead Lighting Total Business \$150,000</td></tr><tr><td></td><td>Tennis 1,000 Courts Total Business \$500,000</td></tr><tr><td></td><td>Miscellaneous Horseshoe Pitching, Trap Shooting, Athletic Stadium, Hockey, Croquet, Archery, Shuffleboard, Handball, Toboggan Slides, Bowling on the Green, Volley-Ball Total Business \$1,000,000</td></tr></table>	Athletic Fields 1,000 Fields to be Lighted Total Business \$1,000,000	Golf Driving Ranges 1,000 Ranges Total Business \$1,500,000	Baseball Fields 4 Stadiums 60 Minor Leagues 75 Semi-Pro & Municipal Total Business \$2,150,000	Major Golf Courses Twenty-five 9-hole Courses Total Business \$500,000	Beaches 100 Municipal 100 Summer Resorts Total Business \$800,000	Pitch and Putt Golf 500 Courses Total Business \$2,500,000	Football 100 School Fields 50 Municipal Fields Total Business \$750,000	Playgrounds 600 to be Lighted Total Business \$600,000	Garden Lighting 100 Home Gardens Total Business \$20,000 100 Municipal and Large Estates Total Business \$100,000	Race Tracks 31 Tracks to be Lighted Total Business \$240,000		Swimming Pools 100 Underwater Lighting Total Business \$500,000 150 Overhead Lighting Total Business \$150,000		Tennis 1,000 Courts Total Business \$500,000		Miscellaneous Horseshoe Pitching, Trap Shooting, Athletic Stadium, Hockey, Croquet, Archery, Shuffleboard, Handball, Toboggan Slides, Bowling on the Green, Volley-Ball Total Business \$1,000,000	\$12,310,000
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VENTILATING FANS	Last year it was estimated that the market was 25,000 residential and 75,000 commercial installations, each involving a wiring job of \$25.00 on the average. Assuming a 25 per cent smaller market in 1932 (it may go larger with a pick-up in residential construction), there is still a very handsome market for the contractor.	\$1,875,000 (exclusive of the fans)																
PUBLIC ADDRESS	Individual installations run into large figures, but it is impossible to make any forecast at to the probable number of installations. However, with almost 100 known uses for these systems and with a number of companies actively developing the field any figure we put down will be ultra-conservative and will merely show that the opportunity is large.	\$2,500,000																
ELECTRIC EYE	This is another market which cannot be estimated. It is much too new to permit of any forecasts. It should run at least 3 to 4 times as large as 1931 and may even be larger. Because each installation is special there is no way of ever arriving at an average wiring cost. We are convinced, however, that the market will run into millions for the contractor.																	
REINSPECTION	There is a total market of \$992,000,000 to be done. More and more cities are taking up reinspection and the movement is gaining headway. There is, of course, no possible way to estimate with any accuracy how much of this work will be done in 1932 and for that reason we have taken the absurd minimum of 1 per cent of the total market.	\$10,000,000																
AIR CONDITIONING	(1) Heating. The tendency is to provide automatic heat and all such systems require considerable wiring. Then there are the regulators also, which in the case of new companies, are being installed by contractors. Many contractors are now specializing in wiring for heat installation.	\$3,000,000																

COMMODITY	MARKET INFORMATION	The Wiring Market
	(2) Cooling: A number of systems for cooling the house in the summer are being worked on and will be on the market in time for the 1932 season. They all, of course, involve a blower handling air precooled by an electric refrigerator or by water. Because this is the first year we are purposely placing the estimate for wiring very low.	\$100,000
RESIDENTIAL RELIGHTING	The N. E. L. A. is planning a national campaign for relighting the home which will be backed up by advertising of the lamp companies. No estimate possible.	
RADIO WIRING	This market includes antenna systems for apartment houses, radios for hotel and hospital rooms, broadcasting station wiring, as well as radio wiring for the home. With radio service becoming more of a factor in the contracting business, this market is bound to increase. The figure in the next column is a very conservative estimate and will undoubtedly be exceeded.	\$3,250,000
MODERNIZATION COMMERCIAL	While figures for the first nine months of 1931 show a 22 per cent decline in volume over 1930, there are forces at work to build up this market in 1932. Elevator and other building equipment manufacturers are making a strong play for this business. If the volume does not exceed 1931 and the electrical work averages only 5 per cent for wiring alone, the total will run into big figures.	\$7,500,000
MODERNIZATION INDUSTRIAL	Here, of course, it is impossible to even approach an estimate, but there is a tremendous untouched market. Mechanical drives offer one fine possibility in 1932. Much of the work, of course, will be dependent upon the business situation. At the first sign, however, of revival this industrial market should be very profitable.	
REWIRING RESIDENTIAL	In each of the 100 cities having A. E. I. chapters the Electragist Chapters are being urged to promote the new A. E. I. wiring adequacy standards. An increasing number of power companies feeling the pinch of reduced residential construction will start some kind of a co-operative campaign with the contractors. A number of manufacturers are planning to stimulate this business with contractors and have brought out new wiring items to promote it.	Over \$1,000,000 (no estimate possible)
REPLACING FACTORY ELECTRICIANS	With the economies involved 1932 should be a very fine year for industrial electrical contractors to convince factory managers of the advisability of substituting their services for the industrial electricians. If only 1,000 factory electricians are replaced and they were costing their employers for wages and supplies \$3,000 a year each, then if the contractor can show a 50 per cent economy, the business of the contractors will be increased by the figure in the next column.	\$1,500,000 for each 1,000 factory electricians replaced
SPECIALTIES	There are many wiring specialties about the house which can be sold by more contractors, such as house numbers, electric door chimes, built-in lighting, replacement of door bell batteries by transformers, Mark-Time switches, garage lighting, etc. There is no way of estimating the volume because it depends entirely upon the energy of the contractor. These can and are being sold by contractors.	
RATE ENGINEERING	There are numerous economies to be made by large users of electricity if they take advantage of the rate schedules. Industrial electrical contractors will find it very profitable in 1932 to study the rates paid by their customers and show them how to save money. Invariably it will mean a wiring job.	No estimate possible
ELECTRIC CLOCKS	More clock manufacturers are expected to come into the field next year. Because of this and the price situation, the volume is bound to grow. Each clock needs an outlet and if there are 1,000,000 clocks sold in 1932 with an average outlet price of \$5.00, then there is a \$5,000,000 market for the contractor.	\$5,000,000
ALSO	There are many other opportunities for the contractor that in the aggregate make a fine volume such as wiring for hot water heaters, built-in electric heaters, electric signs, appliance repairs. For these no estimate is possible.	



One man operates the telephone while the other lowers the cable. Thus the men above keep in touch with the men on the receiving end. If, for example, the cable should slip out of a pull box enroute the men below will know and the cable can be quickly stopped. Note how the cables are run over an empty support reel which is fastened by rope to an overhead pipe and acts as a brake.

temporary 'phone speeds up wire pulling

On the taller buildings instructions are given quicker and with less chance of error, thereby minimizing waste motion and non-productive labor. These pictures were taken in the new McGraw-Hill Building in New York which was wired by J. Livingston & Co.



The telephone also aids the foreman in giving orders to the men as to where they should work when the job is done. This, of course, is impossible when the old system of using signal lights in pulling wire is used.

Operator below signals the arrival of the cable.



THE E. L. S. A. PLAN

**an operating program of
unified economy and
co-ordinated selling for
the electrical industry**

**BY
HOWARD EHRLICH
PRESIDENT
ELECTRICAL TRADE
PUBLISHING COMPANY**

Perhaps Russia with its famed Five-Year Plan was the first to arouse the public consciousness to the novelty of a formal program to reach a definite objective. In any event the idea caught the popular fancy to such an extent that almost everyone now has a pet plan to meet any of the social, political or economic problems of this turbulent era.

It is with some hesitancy, therefore, that *Electrical Wholesaling* and ELECTRICAL CONTRACTING, jointly, propose another plan, not as a cure-all for all the evils of the industry, but rather as an operating program of unified economy and co-ordinated selling that will meet the needs of today. The plan is essentially an objective for the industry and takes its name E. L. S. A. from the four words which comprise its main points—Economize, Localize, Specialize and Advertise.

For some time it has been apparent to the industry that fundamental problems existed which were and are seriously retarding normal development. Such problems, it must be borne in mind, are not entirely the result of the present depression. Even in the supposedly prosperous years of 1927, 1928 and 1929, the industry was facing a critical evolution. Few seemed to realize it or, if they did, the car of prosperity was travelling too fast and too well to give any thought to overhauling the engine.

Nevertheless, the "good old days"—when millions of homes accessible to central station lines were to be wired, when miles of streets were to be lighted with modern units, and when thousands of industrial plants were to be electrified—were rapidly passing. And with their passing, it became increasingly obvious that the influx of manufacturers, wholesalers, contractors and dealers into the industry made it impossible for sufficient business to be dropped into the laps of each of them to keep them profitably busy.

Naturally, a few among this group sensed the evolution which was taking place and visioned not only the absolute necessity for, but also the tremendous possibilities in creative selling as an emphatic substitute for the obsolete practice of order taking. To put it more practically, there is not a "Chinaman's chance" for the contractor, for example, who sits in his office and awaits the call for a job to be figured. Likewise, the wholesaler who merely accumulates a warehouse of supplies and then depends upon the "demand" in his own territory to move that stock at a profit, is the victim of his own short-sightedness. And, the self-same thought applies in equal measure to the dealer and the manufacturer.

Do conditions exist today which replace the markets of

the "good old days"? The answer is Yes!

There stands before us a tremendously big and important job of modernization to be done. Buildings of all kinds which were wired even a few years ago, offer great potential markets for modernization. Besides these there are the many new opportunities which are constantly arising through the developments of new commodities and new applications of old commodities.

These are the observations which constituted the background of our study. When analyzed it became readily apparent that any plan developed from such observations must be based on two fundamental principles.

1. The elimination of all waste.
2. The development of the great potential market through creative selling methods.

On the supplement to this issue is the E. L. S. A. Plan. And,

it will be noted that the first recommendation of the plan is "Economize," under which heading are set forth the most important economies which each branch of the industry must effect if progress is to be made.

Creative selling is covered under the heading of "Localize" and "Specialize" with the high spots of such activities mentioned under the headings that apply particularly to each branch of the industry. Advertising is, of course, essential to all branches and those principles which must be followed on that subject are indicated under the heading of "Advertise".

It is, therefore, apparent that under the headings, "Economize", "Localize", "Specialize" and "Advertise" there is set forth for each branch of the industry a program that recognizes the important needs of today and offers in effect an objective toward which the industry must strive.

Too much emphasis cannot be placed on the fact that the E. L. S. A. Plan is an operating program of unified economy and coordinated selling by the industry. The fullest cooperation of the manufacturer, the wholesaler, the contractor and the dealer must, therefore, be had if the objectives as set forth in the plan are to be attained.

We believe that if the industry is going to be successful in the future it will have to function along the general lines of a program such as set forth in the E. L. S. A. Plan, and that organized leadership is necessary in advocating and sponsoring the kind of program outlined.

In conclusion *Electrical Wholesaling* and ELECTRICAL CONTRACTING are assuming the responsibility for supporting the plan editorially through the pages of these magazines to the end that the wholesaling and contracting branches at least, will do their share towards bringing about a more stabilized and prosperous industry.



SELLS V-BELTS

Hornbeck & Hardie Electric Co., St. Louis, Mo., have the above set-up in their place of business which effectively demonstrates the application of the V-belt short center drive in connection with its use in shoe and textile factories. This arrangement also helps to demonstrate the method the firm uses for the installation of a fan to circulate the air above the heads of the workers at the bench. The 16-in. blade fan is operated from the same line shaft which drives the sewing machines mounted on the work bench.

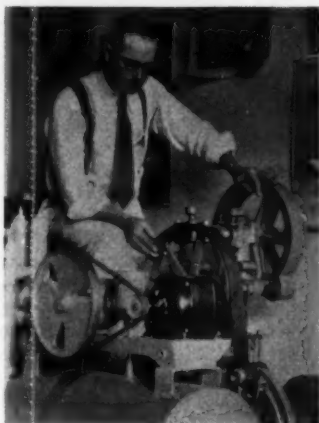
PUMP LINE BRINGS BUSINESS

By H. H. Burgy
Burgy Electric Works
Vancouver, Wash.

On account of the present depression, I found that it was imperative to add something to my business in order to make more sales. I thought of a great many different schemes, and after considering them all decided upon the electric pump for farm use as the ideal thing.

I have, therefore, taken on a line of pumps which were formerly sold by the local power company, they having installed some 300 in this district. I have made a deal whereby they have turned this franchise over to me and are not only backing me in the sale of new installations but are also turning over to me all servicing on pumps so far installed. I can readily see that the servicing of these pumps will keep one man busy, to say nothing of the parts I will sell. After going over the territory I find that the users of the pumps are satisfied with their installations and will welcome my entering into the picture on the servicing end.

Overhead in carrying these pumps is small because they take up very little room. Soliciting for new business falls right in line with soliciting for wiring—not only must the pump be wired, but this gets me in and there are generally other things that develop in the way of additions, new outlets, etc. Every inquiry for new business and for servicing, even if the servicing is within the time of the one year guarantee of the company, is turned over to me.



H. H. Burgy with one of the pumps he sells.

Electrical Contracting, January, 1932

beating the depression

MOTOR CHECK-UP CAMPAIGN

By J. E. von Pingel
Nichols Electric Co., Inc.
Portland, Ore.



While we are primarily motor specialists, and the wiring work that we do is incidental to motor installations, our business has been hit the same as other lines. We have been in business some 10 years and have an established reputation in motor work. In the past we have been more or less content to accept the work that came our way as

the result of this reputation. But in the past few months it was evident that special efforts must be made.

The most logical way to do this appeared to be through direct personal contact, and to build up the sales argument around the present motor installation. I therefore spend a certain portion of my time going through plants and checking up on the motors that are running. Ordinarily when called into the plant on some service call the work would be performed and left at that. Now this becomes the excuse for a thorough check up on all the motors running. Sometimes I go into a plant "cold" and see what I can find.

It is not difficult in industrial plants, or in smaller commercial places of business requiring power, to find a motor running under over-load conditions.

Take as an example the old motor you see here and which I located the other day in one of my checking expeditions. It is 3 hp., 1750 r.p.m. and was driving an ice machine off a 3-in. pulley. In the first place, it was driving the ice machine at an over-rated speed. The motor was controlled simply by an externally operated knife switch with thermal protection. When the power would be interrupted momentarily, which happened not infrequently, and then came on again, it would find an uninterrupted circuit and full load on the motor, with back pressure on the ice machine. The result would be that the belt would either fly off, or, if it stayed on, the small pulley would not start the belt and the latter would be burned. They burned as many as three belts in two months time.

We corrected this by first supplying a slower motor of the same horsepower (1150 r.p.m.) This permitted of a pulley 2 in. greater in diameter, with more belt surface contact. We also put in a magnetic switch that will kick out in case of power failure. Then the machine cannot be started again except with an operator.

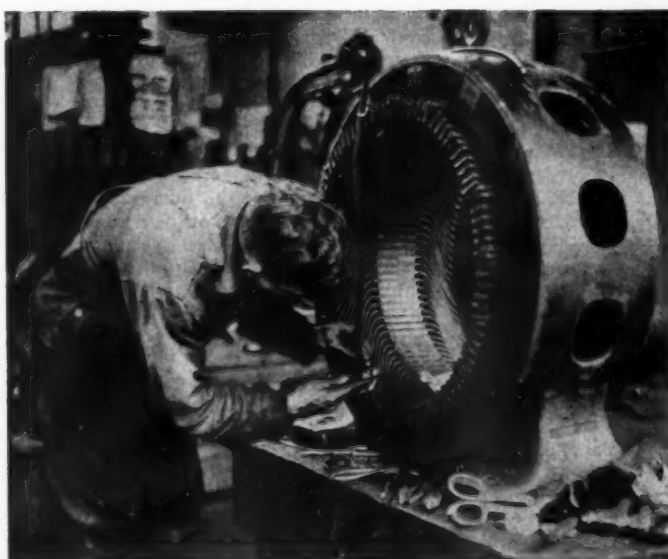
The result of this scouting, check-up and recommendation was that we sold a motor and starter and had an installation job.



sell

In this department is performed all machine work necessary in the repair and reconditioning of motors. This is an especially good spot for demonstration to customers because the machines used here are common to a majority of industrial plants.

In the winding department the customer is shown the benefit derived by the contractor on this specialized piece of work, through selection of the proper motorization and control. Here, as in the entire shop, it is possible to show results under actual working conditions.



When a plant man is in the contractor's shop to see the working of individual motors and controls, it only takes a little more time to take him among the workmen who are making various motor repairs. Then he is shown the careful methods used and the kind of service he can expect when it is necessary for him to send in a machine.

use your own shop to

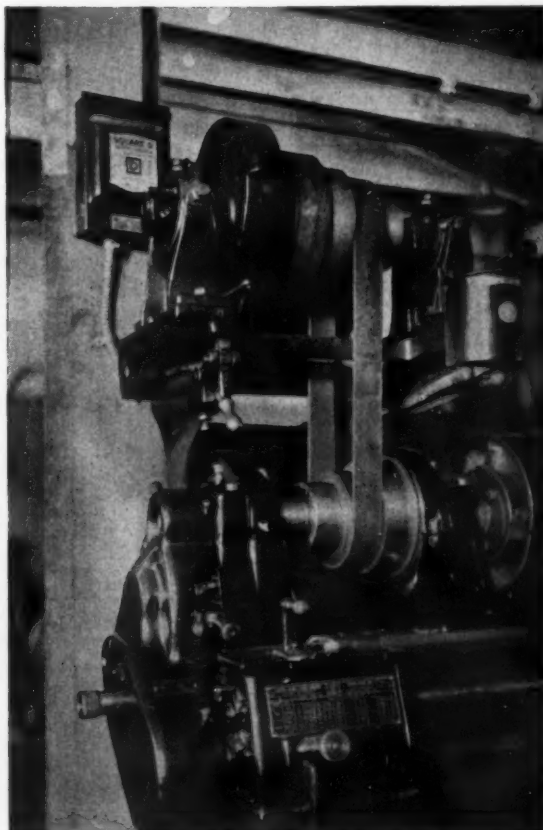
m o t o r i z a t i o n

by L. H. Lanahan, Vice-President and Secretary,
Tri-State Armature and Electrical Works,
Memphis, Tenn.

The selling and servicing of individual motors for industrial machines form an important specialty in the set-up of those contractors who lean toward motor and power wiring. To do a proper job of selling, the contractor is required to put over a highly technical story of economy, freedom from trouble and increased production. In our case, the business has been substantially increased and the customers more thoroughly sold, by equipping our own shop with the latest in individual motors and controls, and using this equipment for demonstration.



The details of the special safety relays in the controls are carefully brought to the attention of the visiting prospect. Then he is invited to watch the operation of the controls under conditions where the motor is overloaded or actually blocked. After watching the motor remain stationary for an indefinite period, without damage, he has first hand knowledge of just what he can expect in the way of freedom from trouble and expense.



There are different controls on almost every machine, according to the operations performed. This means that the customer invited to witness the demonstration of individual motors is at the same time shown all the best features for easier operation and safety.

[illegible]

Realizing that before wiring can be sold a demand must be created a number of cities are now beginning to supply that deficiency.

In some cases, such as Chicago, Milwaukee and Minneapolis the appeal is based on a special offer thereby creating immediate sales. In other cities, such as Schenectady and the lower Hudson Valley cities, the idea is more to create a general desire for better wiring.

Some of the advertisements now running are shown. It is expected that many other cities will join the ranks.

Even though you are very, very careful accidents, big dangers and costly, will happen. Why take chances?

Electric service in your garage is quite necessary to light your way in and out without stumbling or tearing your clothes, to do those odd little jobs on your car with electric tools. In fact you save money by doing so many things yourself that you would otherwise take to a garage. You enhance the value of your garage if you some day want to sell or rent it.

You will be surprised how little it will cost, especially in these days when cash is so much lower. A lot of the electric service is labor, and that is depended on to make you an honest estimate of how much it will cost and you can be certain that his work will be dependable. Call one today.

Any one of These Dependable Electrical Contractors Will Cheerfully Go Over Your Home and Give You an Estimate of How Much It Will Cost to Modernize It. Of Course There Is No Obligation.

RAY BOWEN	5-6675	FRED A. HICKERT	6-3370
J. F. BAUMS ELECTRIC	5-6684	HICKERS & VANDER	6-6912
BRONKH		W. C. HODGSON	5-5473
CRANE ELEC. SUPPLY	5-1680	G. F. SAUTER	5-4191
CO.		KENNY HARDWARE	& ELEC.
BRUCH & HANKE	4-6880	M. H. SCHENKHOFF	6-8112
B. F. FUNKHMEYER	5-3357-W	SCOTIA ELEC. CO.	5-5886
G. & C. ELEC. SUPPLY	5-4864	SHAW-WALKER ELECTRIC	5-6799
CO. INC.		SHAW-WALKER ELECTRIC	5-6799
CO. INC. & SON	4-6492	SHAW-WALKER ELECTRIC	5-6799
S. P. HODGE	5-1500	SHAW-WALKER ELECTRIC	5-6799
ROBERT C. HODGE	5-1500	SHAW-WALKER ELECTRIC	5-6799
M. A. LARSON	5-5886	SHAW-WALKER ELECTRIC	5-6799
CO.		SHAW-WALKER ELECTRIC	5-6799
J. MALES ELEC. CO.	5-5886	SHAW-WALKER ELECTRIC	5-6799

**HUDSON MOHAWK
ELECTRIC LEAGUE**

For full details about this time payment plan ask your electrical contractor or The Electric Company

Or Phone MAquette 9387

**The Electrical League
of Milwaukee**

**DO YOU FIND YOUR WAY AROUND
in your own home?**

Hudson Valley Electrical League

SPECIAL OFFER!
your garage wired for only \$11.95

HAVEN'T you often wished you had electric lights in your garage so you could . . .

- 1—Find the key you dropped on the floor?
- 2—Get the car ready for that trip next day?
- 3—Fix that screen or storm window?
- 4—Feel safer when driving in at night?

Well now you can! The electrical contractors have arranged a special price on garage wiring which is good only for a limited time . . . \$11.95.

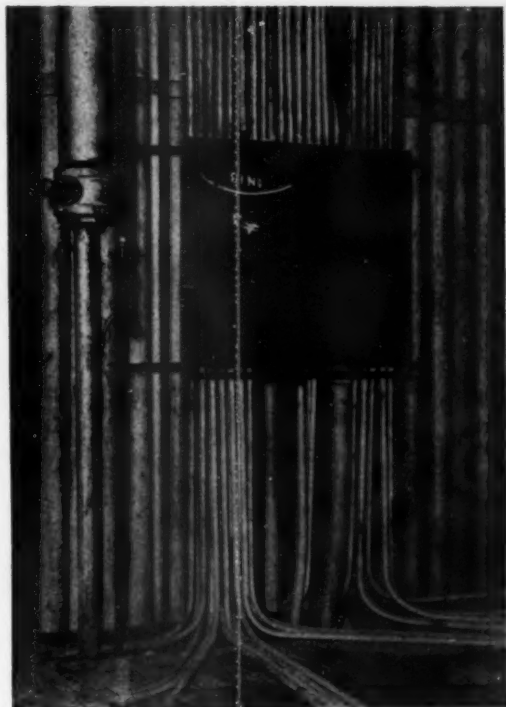
Having your garage wired at this money-saving price will not only give you electric light, but enable you to use an electric motor heater which will warm up the motor of your car for easy starting during the coldest weather.

See your electrical contractor now while this special price is still good. If you wish further information, phone MAin 6231 and ask for the Lighting Department.

Northern States Power Company

Vol. 2 - Manuscripts from

Conduit Shaft Economies



The conduit risers in the County Building at Pittsburgh run in an open shaft for 110 ft. To take up this weight and also to prevent the conduit from riding forward in the shaft before the concrete was poured, the Sargent Engineering Co. used beam clamps. Straps saved money setting panels.

Front view of panel box. By mounting panels in this manner a set location was established to run the panel feeders. Also nipping was avoided.



Rear view of clamps in place. The clamps are made of two pieces of iron bolted together around the pipe and with a hook on the end of one piece which slips over the beam. Each riser was anchored in this fashion at each floor. The straps above the floor are on the back of the panel boxes. Two 3-in. conduits running an equal distance apart throughout the shaft were used as panel box anchors. It was thus possible to make up all beam clamps and panel box strips at one time.

Accurate Estimating

By RAY ASHLEY
Chief Estimator and Engineer, Electrical Survey Bureau, Chicago

This the sixth and last of a series of articles deals with the summary and final bid sheets. In many ways it is the most important of all because it pertains to data which must be used throughout the life of the job.

AN estimate should be so compiled that any one familiar with estimating can thoroughly understand it. The idea that the one who figured the project must be present to explain the work, results from the use of incomplete and poorly assembled estimates.

It is the "acid" test of an estimate to have some one try to use it other than the person who actually compiled the figures. Shortcomings are more readily detected by some one who can not rely on any mental notes to account for the different operations and quantities. Mental notes at best are only of temporary use, and often are found to be confused with the wrong job.

The "summary sheet," though not used by many contractors, is a very valuable aid in the understanding of the work. It is the key to the whole project and a necessary part of a good estimate.

Contractors who do not have a sheet for summing up the integral parts of a project, carry the totals forward from sheet to sheet. The only individual total occurs on the first sheet, and any other sheet has its total combined with all the preceding items. This method has many disadvantages, as well as reducing the value of the completed estimate.

Following are some of the reasons why such a method should not be used:

1. A sheet cannot be summed up until all those preceding it are completed.
2. More errors occur in carrying totals forward, than in transferring individual totals to a summary sheet.
3. There are no separate totals for the individual branches of the work.
4. If, after the sheets have been totaled, it is found necessary to change one, all the successive sheets must be changed.
5. In addition to avoiding the foregoing difficulties, the summary sheet provides:
 1. A condensed list of the branches of work involved, such as light, power, telephone signals, etc.
 2. An index to the pricing sheets.
 3. An index to the take-off sheets (providing they have been numbered as described in a previous article).
 4. Simplifies checking the various branches.

The cost per unit of various branches does not vary a great deal for similar types of installations, and data accumulated from actual construction can only be applied to the systems in question when they have been estimated as separate divisions. The cost of a house telephone installation for certain classes of work may average \$48 per station for instruments installed, and \$20 per station for wiring. Any similar installation which varied greatly from the average price could be checked to find the cause. If the telephone installation was not summed up separately, there would be no way to find the cost per unit.

The contractor who is awarded the job uses the summary sheet throughout the life of the contract as an index, and the segregated labor costs enable him to check the progress of the work more accurately.

Due to the fact that this sheet is to serve as an index,

care should be taken in setting up the headings. A hospital may have an auxiliary emergency lighting system, which receives its power from a motor generator set and batteries. Two sheets may be required for listing the materials; one for the branch wiring and the other for the generating and distribution equipment. The sheets should be headed "Emergency Lighting—Branch Wiring," and "Emergency Lighting—Motor Gen. and Dist." This is much more descriptive than the headings

Combination summary and final bid sheet

"Emergency Lighting" and "Emergency Lighting Continued." Every effort should be made to minimize the time required for locating various items.

The form of sheet to be used for the summary depends on size of the project, and the likes and dislikes of the individual. One of the accompanying illustrations shows a form which combines the summary and final bid sheets in one. This makes a compact and well arranged sheet, which can be used for most any project as it is, regardless of size, with the aid of sub-sheet. For very large projects, or for contractors who wish to have more descriptive matter in connection with the items

Electrical Contracting, January, 1932

electrical contracting

With which is incorporated The Electragist

S. B. WILLIAMS, Editor

19327

LIKE everyone else we have been guilty in the past of predicting, but this year we are accepting conditions as they are, making no predictions, sticking to facts, working a little harder, seeking new markets and advising everybody else to do likewise.

The past week we went into two factories in the same city. One was in the dumps; its volume was decreasing; salesmen were being discharged and all efforts generally curtailed. The other had purchased a new and larger factory and was happily busy.

The answers lay in the fact that the latter got busy some months ago to develop new lines and these lines have sold.

This is the true answer to today's problem. It matters little what one is doing—manufacturing, wholesaling, contracting, or what. Find new outlets for your energies.

There are any number of new things for contractors to take up. What if they are strange to you at this moment? Learn about them and at least try to sell.

Every manufacturer today is more than eager to help a contractor land a prospect. Dig up leads, the manufacturer will show you how to close—and you will be paid for your efforts.

This is a wonderful year for every contractor to seek out and develop some specialty. When building picks up and everybody is busy there is no time to develop a specialty—now everybody has time.

So we make no predictions for 1932. We know that many contractors who have thus far weathered the blow will give up and work elsewhere for a living. Nobody, of course, likes to see a fellow lose all of his savings and his business but the fact remains that only the strong and courageous can survive. This depression is going to leave a contracting industry that is much stronger in

potentialities. The contractors that live through this situation will be the men who will carry the bulk of the business when it turns back—because they are salesmen.

CONGRATULATIONS, ELECTRAGISTS!

THE Electragists after making every reasonable effort to cooperate with the other branches of the industry have at last decided that the only way to get things done for the contractor is to go out and do them. Congratulations, A. E. I.!

On another page will be seen the program to counteract the insidious propaganda of N.E.L.A. headquarters for lower wiring standards. It should be the rallying cry for all electrical contractors.

Those who are not Electragists should join the ranks. Individually you are helpless to prevent the power crowd from turning your business over to the public. Collectively you are stronger than all of the power companies.

The time has come for the contractors to take an aggressive attitude with respect to their own business and not let others tell them what they can and cannot do.

LICENSE EXAMINATIONS

ORDINANCE after ordinance requires that before an electrical contractor may secure a license he shall pass a "satisfactory examination." Just what is a "satisfactory examination"?

This is a matter of serious import to the contracting industry. The depression, if it has not done another thing of value, has at least been reasonably successful in thinning out the ranks of contractors.

For years the industry has tried everything it could think of to accomplish what the business situation has brought about. But the ranks will not stay thinned out for long unless "satisfactory examination" means something more than a perfunctory gesture.

The industry needs a type of examination that is thorough and fair—an examination that cannot be passed except by those who are truly qualified. It is unfair to expect a local examining board of three men to be able to develop a satisfactory examination. Some have, but they are in minority.

It is here suggested that the International Association of Electrical Inspectors and the

Association of Electragists appoint a joint committee for the purpose of developing a form of examination and procedure that may be followed in any locality.

It is not suggested that this committee actually prepare the examinations but rather that it set up certain measuring sticks and ways of arriving at the measurements.

Let us not sleep on this matter. Right now the tide is flowing out, but it won't be long before it will return with a new and larger batch of prospective contractors.

BETTER MECHANICS

AN interesting experiment is taking place in Wisconsin with its objective the improvement of the workman personnel of the electrical contracting industry, particularly the apprentice. The training will be under the supervision of the State Board of Vocational Education acting with an advisory committee of electrical contractors.

The industry does not need more mechanics, it needs better men. It needs men who are trained not only to use their hands, but their head as well.

It is not enough to simply give a boy four years' apprenticeship in some contractor's shop. Men have to be taught and it is not every journeyman who can properly teach a helper. More care and attention must be given to the men and boys who are entering this work.

Intelligent training of apprentices will save the industry vast sums of money.

INDUSTRIAL MODERNIZATION

ONE of the greatest storehouses of new business for the industrial electrical contractor is modernization. In thousands of factories it should be no trick to show the management a considerable economy in modern motorization, control drive, lighting and wiring. Larger feeders alone will save thousands of dollars.

Factory owners will agree on the advisability of following out the program of the industrial electrical contractor but—where is the money coming from?

The Electrical Guild of North America has answered this problem by arranging with a well established time payment company to extend credit for electrical modernization to industrials that have a satisfactory credit standing.

This should prove to be a very effective aid to contractors who are trying to develop the industrial modernization market. It is quite possible that in many cases the savings effected will be enough, or almost enough, to take care of the payments as they become due.

There is, however, one word of caution and undoubtedly the officers of the Guild have given it full consideration. Many factory executives are very much opposed to permitting union workmen in their plants on the grounds that they will interfere with existing labor relations in the plant.

Since Guild members employ only union wiremen it would seem advisable for the I.B.E.W. to make a statement of policy in this connection that would make it possible for the contractors to assure prospective customers, where necessary, that there would be no attempts at labor interference.

If the Guild and the I.B.E.W. are in accord on the principle that the worker's real interest lies in an annual income then there should be no difficulty in securing from labor an unequivocal statement of "hands off" policy in factories where they might have work to do.

PRICE CHANGES

WHILE a depression is on, prices trend generally downward and it is good business to keep stocks at the lowest possible levels. When a depression is about over we generally see unmistakable signs in fluctuating prices. Manufacturers whose products are under-priced look for the first opportunity to improve their position.

There are already attempts being made to increase the price of commodities such as copper, and there is every likelihood that the coming months will see considerable testing of prices and consequently many fluctuations.

The Resale Price Service which appears in each issue of ELECTRICAL CONTRACTING will reflect these changes as made. It is a service which should prove of unmeasurable value to the industry.

When prices are down your competition has so informed your customer and you must conform. When prices advance you are on your own unless some such service as our Resale Price Service is available.

Then it is that thousands of dollars will be saved by the contractors using that service.

code chats

A MONTHLY DISCUSSION OF WIRING PRACTICE AND QUESTIONS OF INTERPRETATION, PRESENTED WITH A VIEW TOWARD ENCOURAGING A BETTER UNDERSTANDING OF THE NATIONAL ELECTRICAL CODE.

CONDUCTED BY F. N. M. SQUIRES

ASSISTANT CHIEF INSPECTOR, N. Y. BOARD OF FIRE UNDERWRITERS

NEW FIXTURE WIRE RULES

Since the advent of the high heat producing incandescent lamps trouble has been experienced from the heat affecting the rubber insulation on fixture wires. While the former Code required heat-resisting wires quite generally where temperatures over 120° F. were encountered there were always differences of opinions in regards to the heat to which fixture wires were exposed.

Also very often after a job had been installed, inspected, and approved, larger lamps were used than those originally installed, thus subjecting the wires to more heat than formerly. Now, however, the Code has settled the arguments by requiring (1404d) that all fixtures used in dry places and also those of weather-tight construction be wired with some form of heat resisting wire, and mentions seven types none of which is one of our familiar type of rubber covered wire.

ONE GROUND CONNECTION ONLY

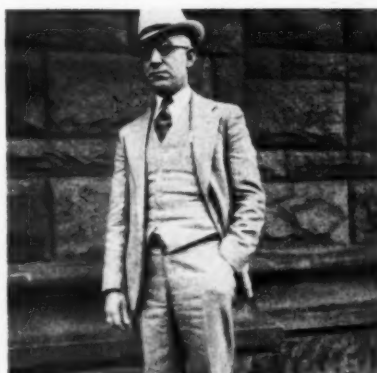
"At a farm home in this section we find at the farm house a 220 volt service with neutral grounded (with artificial ground). The barn 300 ft. away is served with 200 volts for a small motor, No. 14 wire being used. For lights in the barn they take the neutral from another artificial ground."

It is assumed that the farm house has a 3-wire 110-220 volt service with the neutral grounded (with artificial ground) at the service entrance. From the statement in the letter it would seem that there are but two No. 14 wires run from the house to the barn for both a 220 volt motor and 110 volt lights.

As the total power and lighting

load in the barn probably does not exceed 15 amp. the No. 14 wire is evidently large enough, though to avoid drop on such a long run larger size wires should be used.

But the use of two wires running to the barn and then picking up a neutral from another artificial ground in the barn is clearly a Code violation. A three wire feed should have been run from the house to the barn and in the barn besides a switch on this feeder, if no switch was provided in the house, there should be a motor branch circuit and a lighting branch circuit with the neutral for this coming all the way from the house. Rules 903 (d) and (e) govern this and require that "the grounding connection for an interior wiring system shall be made *on the supply side of the service switch*" and "shall be connected from *one point only* to the grounding electrode or electrodes."



PUSHES REINSPECTION:—T. C. McCann, electrical inspector for Peoria, Ill., follows through on reinspection as provided by the city ordinance. He has been electrical inspector for seven years, and previous to that time was in the electrical contracting business.

INTER-CONNECTED NEUTRALS

Because of three communications received during the month of November from different parts of the country we again refer to our old friend the Neutral in an endeavor to help clarify the subject.

While Section 613 deals with feeder sizes and paragraph (e) of 613 with the neutral of feeders, the second sentence of 613 (e) plainly says that a common neutral may be employed for not more than 8 circuits on a 3-wire d.c. or single phase a.c. system or on a 5-wire 2-phase a.c. system, and with not more than 6 circuits on a 4-wire 3-phase system. Also 808 (c) allows the use of multi-wire branch circuits.

The restriction on the inter-connection of neutrals of various branch circuits is intended to prevent cross connecting the neutral of one branch circuit with that of another in such a way that the current will not follow a path enclosed within the same armor.

It is not intended to prevent running a multi-wire circuit using a common neutral (such as a 3-wire or 4-wire circuit) away from a distributing panel to an outlet or junction box and then running away from that box with two or more 2-wire circuits. This latter practice is being followed in many installations, and does not violate the Code.

The trouble with the rule, and the thing that has confused many, is the word "inter-connected."

Official National Electrical Code Interpretation No. 2 as issued by the Electrical Committee N.E.P.A. says, in part,

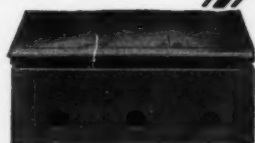
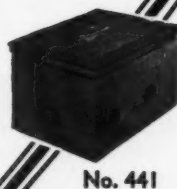
The intent of the restriction of paragraph 807 (c) "the neutrals of the branch circuits shall not be inter-connected except at the center of distribution" was

Electrical Contracting, January, 1932

The ALLEN

Improved Pipe Bender

Is
Manufactured
and
Distributed
by
**STEEL
CITY**



Also
The Latest
Improved
Economical Line of
FLOOR OUTLETS

When submitting your bids tell the Engineer and Architect that you intend to use "Steel City" products and they will know the best obtainable will go into the job.

See our complete catalog in the 1931 File of McGraw-Hill Electrical Trade Catalogs or write us for a reprint, pages 67 to 90 inclusive.

STEEL CITY ELECTRIC CO.
Pittsburgh, Pa.



to prohibit deriving a 3-wire branch circuit from a circuit consisting of the two outer wires of a 3-wire system run for some distance from a center of distribution and then joined by the grounded neutral wire of a separate branch circuit to accomplish for the remaining portion of the original 2-wire circuit the equivalent of a 3-wire circuit with grounded neutral.

FIXTURE CANOPIES AND OUTLET BOXES

For years it has been recognized, especially by inspection departments, that outlet boxes had not been standardized with fixture canopies. In some cases the outlet boxes were larger than the fixture canopy used on it, if indeed, any canopy was used at all. More frequently, the canopy was larger than the outlet box. They just didn't fit together at all.

While it is very generally conceded that the outlet box and the canopy should form a metal enclosure for splices, it has been known that where they did not make a satisfactory splicing compartment there was very often considerable flammable material within the enclosure. Now rule 703 (a) requires that "in completed installations, the (outlet) box shall be provided with a cover." But "when a fixture canopy is used in lieu of a cover and the wall or ceiling is of combustible material, a continuous metal to metal (or equivalent) fit shall be secured between the edge of the box and the canopy."



FRIENDLY COMPETITORS:—Guy R. Somers of Service Electric Company, R. B. Foster and O. L. Bowers are all electrical contractors in Columbus, Ohio, and are shown coming out of a jobber's store. They operate pretty much the same as to the nature of the wiring business they do, which consists of residence, industrial and commercial work. Bowers and Foster often work together. When this picture was taken they were about to begin on a 13-story building.

Also on the installation of the fixture we are warned by 1403 (f) that "fixture canopies used in lieu of covers at outlet boxes shall provide a continuous metal to metal (or equivalent) fit with the run of the box wherever the wall or ceiling is of combustible material."

This means that the fixture manufacturers must get busy and design proper size canopies and the contractors must see to it that only the right ones are used.

OMITTING THE SERVICE SWITCH

The service rules used to be quite simple. Up to the 1928 Code a main service switch and cutout had to be provided for each building. Then with the 1928 Code we were startled to find in rule 405 (c) 4 that in buildings served through two, three, or four meters where there was a separate switch and cutout for each meter the single main service switch could be omitted. In other words there could be four service switches grouped at one point instead of but one. Now that we have digested that rule and have gotten used to it they give us another brain teaser. This is rule 405 b (2) which is entirely new. But before reading the whole sub-paragraph (2) note that the second word is switch. Therefore it is only the service switch which may be omitted under the paragraph's provisions, but the service fuse (or circuit breaker) can not be omitted. The controller (switch) but not the main protective device (fuse or circuit breaker) may be eliminated.

Now read sub-paragraph (2) slowly and carefully taking note of all reference. In its 16 lines of print (plus 10 lines of reference) there are 12 conditions which must be met if we are to omit the main service switch.

For a clear setting forth of these conditions we are indebted to Arthur L. Abbott's "Analysis of 1931 Edition of the National Electrical Code" as published by the National Electrical Manufacturers Association.

These are the 12 conditions:

1. The building served must be a single-family residence.
2. The installation must not include more than 6 branch circuits.
3. Each branch circuit must be protected by a circuit-breaker.
4. The branch-circuit circuit-break-

ers must be grouped in a single readily accessible cabinet located at the point of entrance.

5. The branch-circuit circuit-breakers must be capable of being operated and reset without opening the cabinet.

6. Means must be provided within the cabinet for opening the grounded conductor.

7. Ungrounded service conductors must not be exposed to contact when the door of the cabinet is open or its cover removed.

8. The capacity of the service conductors must be equal to the sum of the settings of the individual circuit breakers.

9. The meter must be installed in conjunction with sealable equipment having no live parts or wiring exposed.

10. The system must be A.C.


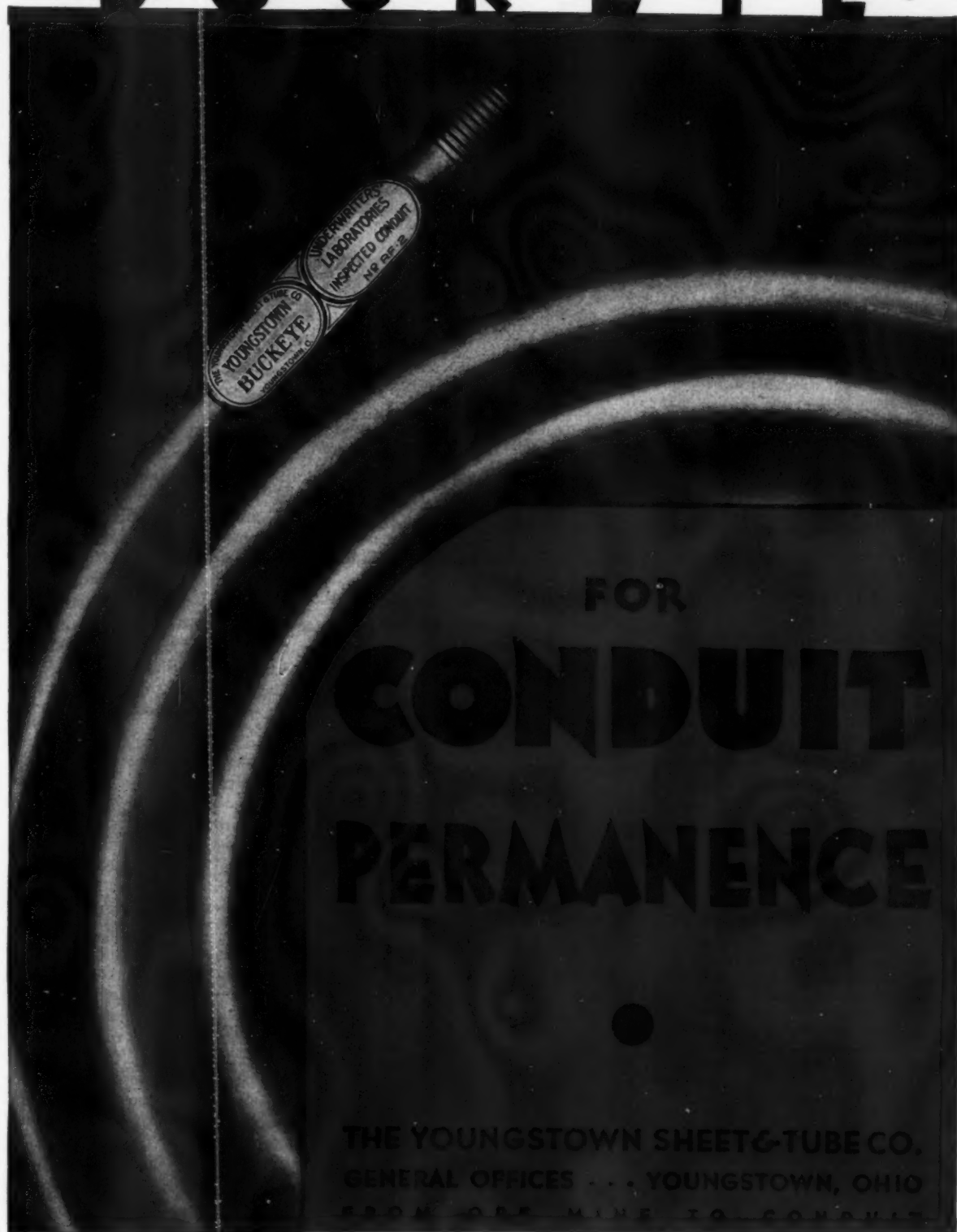
11. The system must operate at a voltage not exceeding 300 volts between conductors and 150 volts to ground.

12. The rating of the service fuses must not exceed 60 amperes, or if a circuit-breaker is used instead of fuses, the setting of the breaker must not exceed 70 amperes.



BUILDING SUBSTANTIAL INDUSTRIAL BUSINESS:—A. E. Bertke founded the Bertke Electric Company, Cincinnati, only three years ago but his experience was such that he has built up a substantial industrial business in that short time. He began as a young man with the Western Electric Company in the stock and telephone departments. After that he was a journeyman for a number of years and then estimator for Devere Electric Company for ten years. He is a graduate of Ohio Mechanical Institute and had charge of the electrical department in the Reconstruction School for Disabled Veterans at Camp Sherman, Chillicothe, Ohio.

YOUNGSTOWN • BUCKEYE •



FOR
CONDUIT
PERMANENCE

●

THE YOUNGSTOWN SHEET & TUBE CO.
GENERAL OFFICES . . . YOUNGSTOWN, OHIO
FROM ONE MINE TO CONDUIT

A.E.I.

NEWS AND SERVICE INFORMATION

MATERIAL FOR THIS DEPARTMENT IS SUPPLIED BY THE HEADQUARTERS STAFF OF THE ASSOCIATION OF ELECTRAGISTS, INTERNATIONAL
420 LEXINGTON AVENUE, NEW YORK, N. Y.

President, L. E. Mayer
14 North Franklin Street, Chicago, Illinois

Vice President, Earl N. Peak
1603 West Main Street, Marshalltown, Iowa

DIVISIONAL EXECUTIVE COMMITTEEMEN

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Louis Kalischer
288 Livingston St.
Brooklyn, N. Y.

Southern
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844 Martin Bldg.
Birmingham, Ala.

Southeastern
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315 S. W. 10th Ave.
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At Large
L. K. Comstock
16 East 52nd St.
New York City

J. A. Fowler
118 Monroe Ave.
Memphis, Tenn.

General Manager
Laurence W. Davis
420 Lexington Ave.
New York City

FIGHT CHEAP WIRING PROPAGANDA

Answering the propaganda of H. S. Bennion, representing the N.E.L.A., for "cheap as lamp cord" wiring materials to be placed where "householders everywhere can buy them," to increase the sale of current for the utilities (as reported on page 20 in the December issue of *ELECTRICAL CONTRACTING*), the Association of Electragists, International, is inaugurating a broad, constructive program to counteract such efforts to place the sale of current ahead of the lives of people, safety from fire hazards, or the permanent interest of the public and the electrical industry.

This program consists of the following major steps:

1. Declaration of firm policy for standardization and simplification of wiring materials, working towards the adoption of All-Metal-Wiring—rigid metallic-coated conduit, flexible metallic conduit, armored bushed cable, metal raceways and standardized boxes, fittings, wires and cables—in the interests of public safety and greatest ultimate economy.
2. Strengthening of local ordinances governing wiring installations to prevent lowering of safety standards.
3. Organization of local industry code and wiring standards committees in every city in the country.

4. Adoption of the Electragist Adequacy Standards and their acceptance by all architects and builders. The A.E.I. has issued the following announcement:

It is necessary for the electrical industry in every community to meet destructive propaganda with measures which will protect and safeguard their own people, for whose welfare they are responsible. At the same time, constructive steps need to be taken to assure to the electrical users

in each community increased adequacy in wiring installations, through standardization in adequate wiring practice, simplification of wiring methods and materials, sound and effective local ordinances governing wiring, and the cooperation of architects, builders and all electrical men keeping pace with the growth of electrical service opportunities.

In this movement the Association of Electragists is taking the lead nationally, and local electrical contractors must take the lead locally. No national movement can protect their own communities if insidious propaganda, such as this for "approved lamp cord wiring," finds a foothold there, to strike at safety to life and property and destroy their business as electrical contractors. Only the electrical men of each community can act for their own interests.

Adequate Wiring

The Electragist Standards covering "Engineering Design for Adequacy in House Wiring Installations," is a first step in a broad program undertaken by the A.E.I. to meet this great need for constructive development of adequately wired homes. This is the first step—which will be followed steadily by standards covering adequacy in other wiring installations.

These adequacy wiring standards are the "road maps" showing the route—they will not take us anywhere unless we travel the road. The A.E.I. urges, therefore, that local contractors everywhere immediately take the following steps:

Organize

1. Call for a meeting of the local Electragists' Chapter. (If you have no chapter, call together all the electragists and other leading electrical contractors in your local territory, and organize for action and to form a chapter.)

2. Have this organization take the lead in creating a local industry code and wiring standards committee to be made up of two or more electrical contractors, the local electrical inspector, an underwriters' representative, a local utility company representative, an architect (to be appointed by the local chapter of the A.I.A.), and a representative of the electrical workers.

3. This local code and wiring standards committee should be organized.

(Continued on page 28)



MILWAUKEE CHAPTER EXECUTIVE:—George A. McGaw is vice-president of the Milwaukee Chapter, A.E.I. He has been in business for a number of years and his work is mostly large structures and industrial installations.



"Are You Buying a Cat in a Bag?"



Are you investigating (a)-Values, (b)-Satisfactory Service, (c)-Long Life, (d)-Prompt Deliveries?

Have you carefully considered what you will actually get with the low-priced bid?

Do you realize that a concern with a reputation for leadership can not afford to cheat with a low-priced bid? Imitations must be cheap or lose out.

Remember **FA** Quality will remain LONG after the price is forgotten.



Frank Adam
ELECTRIC COMPANY
ST. LOUIS



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General Engineering &
Equipment Co.
108 N. Third St.
P. O. Box 76

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64 Cone St., N. W.

Baltimore, Md.
Wolfe-Mann Mfg. Co.
312 S. Hanover St.

Boston, Mass.
J. J. Cassidy,
231 Congress St.

Buffalo, N. Y.
Ralph E. Jones,
137 Saranac Ave.

Chicago, Ill.
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4603 Fullerton Ave.

Cincinnati, Ohio
E. F. Schurig,
105 East Pearl St.

Cleveland, Ohio
Frank Reske,
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1814 Allen Bldg.

Denver, Colo.
Fred E. Stalble, Inc.
2356 Blake St.

Detroit, Mich.
H. H. Norton,
2663 Wabash Ave.

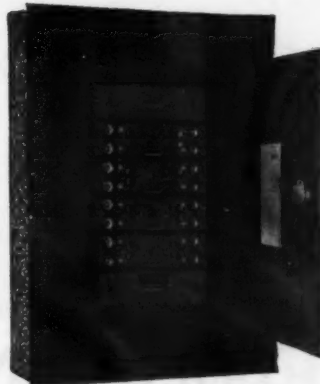
Kansas City, Mo.
Robert Baker,
19 E. 14th St.

Los Angeles, Calif.
E. Zimmeyer,
1127 S. Wall St.

Memphis, Tenn.
C. B. Rutledge,
203 Monroe Ave.

Minneapolis, Minn.
Leo H. Cooper,
422 Builders' Ex. Bldg.

New Orleans, La.
W. J. Keller,
203 Natchez Bldg.,
Magazine & Natchez Sts.



New York
Fred G. Kraut,
419 W. 54th St.
New York City

Omaha, Nebr.
B. J. Fleming,
213 S. 12th St.

Philadelphia, Pa.
W. A. MacAvoy, Jr.,
244 North 10th St.

Pittsburgh, Pa.
Wm. A. MacAvoy, Jr.,
Dist. Mgr.,
R. E. Thomas, Res. Mgr.,
P. O. Box 1349

St. Louis, Mo.
O. H. Rottman,
3650 Windsor Place

San Francisco, Calif.
Lee Van Atta,
340 Fremont St.

Seattle, Wash.
R. E. Dryer,
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P. E. Ebersole,
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Amalgamated Elec.
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Gen. Sales Office,
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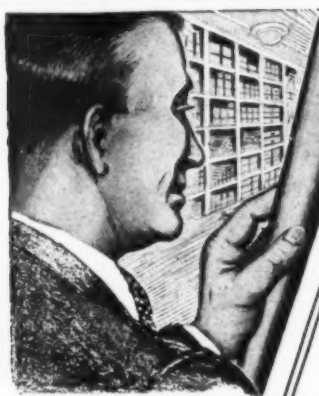
Vancouver, Can.
Amalgamated Elec.
Co., Ltd.,
Granville Island

Winnipeg, Man., Can.
Amalgamated Elec.
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677 Notre Dame Ave.

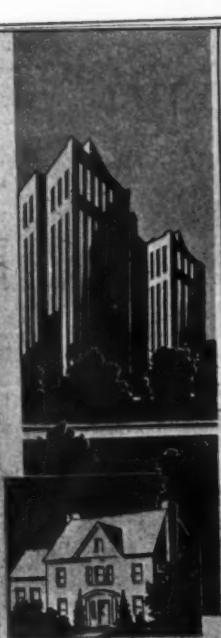
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Co., Ltd.,
1301-11th Ave. East

Hamilton, Ont.
Amalgamated Elec.
Co., Ltd.,
18 Mary St.

Montreal, Can.
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*To Increase the Volume of
and the Profit in*
ELECTRICAL WIRING JOBS



A practical plan
for the
ELECTRICAL CONTRACTOR

ARROW-HART & HEGEMAN ELECTRIC CO.
HARTFORD, CONNECTICUT, U. S. A.

HART & HEGEMAN DIVISION
THE ARROW-HART & HEGEMAN ELECTRIC CO. HARTFORD, CONN.

→ *Not the Old Plan—* *"Wait for Building"* but a **NEW Plan—** *Building business on* *what we HAVE!*

NEW building is OFF more than average slump in other industries. Decline in home-building has not yet halted—and you can't hang wiring systems on trees. Not enough building now, or in sight, to support our present wiring industry. A new market must be found—and a new market EXISTS in the tremendous total of wiring installations made in the past ten years. These jobs are behind-times in electrical accommodations. They are not now adequate to care for the many advances in electrical conveniences, new appliances and lighting. Home owners do not realize the number of additional comforts and services which a completely up-to-date wiring job will afford. The H & H PLAN is to ORGANIZE this market and make it alive to its present needs.

You, the Contractor, are the industry's point of contact with our consumer. The home-owner is your customer; you have his name on your books. You're in position to know what he has, and see what he NEEDS to modernize his wiring installation. The PLAN explains how to approach him and sell him on the "SHOW PART" of his wiring job. This works up the sale of additional wiring on such attractive, appealing new devices as Radio Outlets, Clock Hanger Outlets, Fan Hanger Outlets, Pilot Light and Switch Combinations, Warning Light and Receptacle Combinations and others.

The PLAN Book gives you simple directions on how to analyze your old-customer list, coach your men in home-inspection and advisory service; lay out the new wiring requirements, present your customer a complete proposition including installed cost. It is a Plan of Experience, which has WORKED AS PLANNED and will surely succeed for you if carefully followed. Send for your copy and break into a new market without waiting for new building!



THE SHOW PART

The Flush Devices are the ONLY part of the wiring job your customer sees or uses. They are the parts to concentrate on in creating new jobs and new profits.

RETURN THIS COUPON

It Brings Action by Return Mail

Yes, I'd like copy of the H & H Plan as given in the free booklet offered.

Name.....

Address.....

Town or City.....State.....

My Electrical Distributor is.....

City & State.....

HART & HEGEMAN DIVISION

THE ARROW-HART & HEGEMAN ELECTRIC CO. HARTFORD, CONN.

(Continued from page 24)

ized as promptly as possible, and lay out the following program:

- (a) Analyze in detail the recommendations embodied in the Electragist Standards for Adequacy, as to outlets, switches, branch circuits for lighting and portable appliances, circuits for fixed appliances, service capacity and service equipment, and arrive at a common agreement as to its application in your territory.

(Additional copies of the "Electragist Standards for Adequacy in House Wiring Installations" may be secured from headquarters at 25 cents each, for committee or general use.)

- (b) Secure the approval and endorsement of the utility company to the standards agreed upon by the committee.
- (c) Secure the endorsement of the local Chapter of the architects to these standards, and supply all local architects with copies of the standards and with the form of specifications for residence wiring covering the standards.
- (d) Place the adequate wiring standards in the hands of all builders, with the recommendation of your local committee attached.
- (e) Arrange a series of electrical contractors' group meetings to study the standards, until every electrical contractor is familiar with them.

Range Wiring

4. The local industry code and wiring standards committee should immediately contact with the local utility company regarding any plans the company may have for range selling campaigns, and offer its services for—

- (a) Development of satisfactory standard service and range wiring.
- (b) Promotion of plans for selling the range customer as to the importance of putting in service equipment at that time adequate to take care of reasonable certainty of further load demands in the near future, and not make it necessary to do the work all over again when other heavy duty equipment is added.

Ordinances

5. The code and standards committee should turn its attention to the local ordinance governing wiring installations. (If there is no local code and inspection ordinance, the committee should take proper steps to secure the enactment of such ordinance.) The committee should give consideration to the following questions regarding the regulation of wiring within their city:

- (a) Does it require a permit before work is started, to assure proper inspection of all work?
- (b) Is the inspection being properly enforced?
- (c) Is reinspection being carried on, to prevent serious life and fire hazards being incurred by amateur wiring after the original installation has been inspected?
- (d) Does the ordinance provide the proper restriction as to the types of wiring methods and materials which may be used in your city, to assure the public of safety to life and property, with adequate degree of permanency and economy?

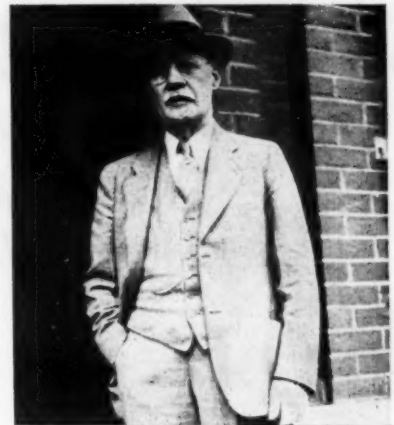
Simplification

The increasing numbers of wiring methods and materials being permitted in the National Electrical Code to perform identically the same function of carrying current, has increased the complexity of manufacturing, distribution and installation costs, until this complexity has become a serious burden and a real obstacle to economical installation.

The A.E.I. believes that three or four wiring methods are ample to meet practically all needs of diversity in average building conditions and occupancies, and that the All-Metal types of wiring systems provide the necessary range of diversity to meet such needs, embodying greatest safety to life and property, permanency and efficiency of operation, with greatest flexibility and economy of installation.

Adopt All-Metal

The A.E.I. recommends that electrical contractors work towards the adoption of All-Metal wiring installations—rigid metal conduit, flexible metallic conduit, metal armored cable and metal raceways—as the standard



MOTOR SPECIALIST IN ELECTRICAL BUSINESS 33 YEARS:—James L. Hardie, motor specialist of Hornbeck & Hardie Electric Co., St. Louis, Mo., has been in the electrical business 33 years. Originally he was with one of the motor manufacturers, then followed a long connection with one of the leading jobbers in charge of apparatus sales, and since 1919 with Hornbeck & Hardie Electric Co. The firm operates a modern motor repair shop and specializes in industrial installation work.

wiring methods in each community. In the interest of public safety and greatest ultimate economy. Experience has proven in many cities that the adoption of all-metal wiring by ordinance requirements has lowered the costs of wiring, through standardization of materials, simplification of distribution and handling, and increased efficiency in installation.

This program for adequate wiring is vital to the future of the contractors' business. Mr. Bennion's article proposes that materials for "lamp cord wiring" should be placed where "householders everywhere can buy them in convenient and attractive form," and "the National Electrical Code and city ordinances be modified to permit the use" of "cheap as lamp cord" wiring. There is no place in that proposal for the electrical contractor—nor for the safety of the homes where such wiring prevails.

Public Safety

Steadily, little by little, the industry standards for safety to life and property have been torn down and commercial interests have replaced them. The time has come to act! Every right thinking man in every community will support a movement to safeguard his own home. The A.E.I. urges every electrical contractor to participate in organizing a local industry code and wiring standards committee in his community.



ELECTRAGIST ACTIVE IN BUILDING CONGRESS: J. R. Tomlinson, secretary of the Portland (Ore.) Chapter of Electragists, is actively engaged in the organization of the electrical department of the Trades Apprentice School. This school is promoted by the Oregon Building Congress established in 1921, and in which Mr. Tomlinson is very much interested.

▲

America's most moderately priced Electrically-Wound Time-Switch *is made by* **SANGAMO**

America's first high precision electrically-wound Time-switch was introduced a year ago by Sangamo, internationally-known manufacturer of electric precision instruments. Now comes its companion... a new Sangamo Time-switch, at a much lower price. Here are its main features:

- 1... Electrically-wound. Not synchronous, not affected by variations in frequency.
- 2... Ten (10) hours reserve in the event of current interruption.
- 3... 40-ampere capacity.
- 4... Frequent "on" and "off" operations without additional cost.
- 5... Automatic cutout for holiday, Sunday and/or daily operation.
- 6... Manual operation without disturbing sequence.
- 7... Jeweled clock escapement... dust-proof... good time-keeping qualities.
- 8... Clock mechanism enclosed in dust-proof housing.
- 9... $\frac{1}{2}$ " and $\frac{3}{4}$ " pry-outs back and bottom of switch case.
- 10... Guaranteed by Sangamo, having sales, service and engineering facilities adequate to care for any requirement.

With the Sangamo Time-switches, you can meet any time-control problem... both on the basis of quality and of price.

Write for complete details.



▼

SANGAMO ELECTRIC COMPANY • SPRINGFIELD, ILLINOIS

IN THE EDITOR'S MAIL

FIFTY-THREE YEARS A CONTRACTOR

Editor,

ELECTRICAL CONTRACTING:

I am enclosing this clipping from the December issue of ELECTRICAL CONTRACTING:

"Who is the oldest electrical contractor in years of service in the largest county in the largest state of the Union? The answer is Murphy Johnson, Alpine, Brewster County, Texas."

I wish you would date Mr. Johnson up and see how he compares with my record of 53 years in the electrical contracting business.

I would be pleased to see answer in your next issue.

S. R. PAYSON.

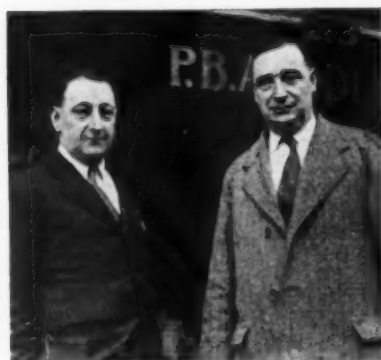
Providence, R. I.

PROBATION FOR NEW CONTRACTORS

Editor,

ELECTRICAL CONTRACTING:

In my annual report to the State convention, I recommended that no man entering business be given credit, without at least six months proba-



ONE OF FT. WAYNE'S OLDEST FIRMS:

—On the left is Earl Arnold, with his brother, P. B. Arnold, who founded the Arnold Electric Co. about 30 years ago, making it one of the three oldest electrical construction companies in Ft. Wayne, Ind. This is a partly specialized firm, with emphasis on large work, fixtures and remodeling. Earl Arnold supervises the construction.

tion, irrespective of his financial means or backing.

I am glad you made a similar recommendation in your article, "Weeding," in December issue of ELECTRICAL CONTRACTING.

It is more important to control new contractors at the present time than it may be in the future. So many of the unemployed may go into business, and create a situation which will become more serious as times and conditions improve.

Keep on pounding this thought in your columns, so that jobbers and distributors will be thoroughly impressed.

LOUIS FREUND,
President, N. Y. State Assn.
of Electrical Contractors
and Dealers.

GARAGE WIRING ARTICLE HELPS

Editor,

ELECTRICAL CONTRACTING:

The Garage Wiring Economy article in Practical Methods for October came just at the right time to be of real service to me. It solves an underground service between a new house and garage where a change was desired by owner after walls were all plastered and underground conduit all in. Many thanks.

NORMAN W. ALLEN.
Sycamore, Ill.

WANTS HELP IN CREDIT CONTROL

Editor,

ELECTRICAL CONTRACTING:

We have in Fort Wayne in the neighborhood of twenty-five electrical contractors and three jobbing houses. About six of these contractors discount their bills. At least half of the entire group are extremely slow pay and many of them owe and have owed for a long time large sums. These fellows, however, seem to be getting materials. They purchase from one house and then another and eventually quit the game, but others follow in their footsteps.

Those who pay their bills feel they have at least in a degree the right to demand of the jobbers to insist on prompt payment of all bills by contractors and some arrangement made to pay old accounts in a systematic way.

Was wondering whether you might be in a position to offer some sug-

gestions. Surely some of the clubs around about us have had considerable experience from this standpoint.

A. H. WELKLIN,
Director of Publicity,
Fort Wayne (Ind.) Electrical Club.
[Other local associations are urged to write direct to Mr. Welklin, 3405 N. Clinton St., Fort Wayne, Ind.—EDITOR.]

THANKS

Editor,

ELECTRICAL CONTRACTING:

We wish to congratulate you on the article on pages 10 and 11 of the October issue of the ELECTRICAL CONTRACTING, dealing with the reasons why electrical contractors should replace plant electricians.

We think this is one of the clearest and most concise articles on this subject it has been our pleasure to read.

Would there be any objections to our using a part or all of these twenty-five articles in our local advertising campaign which we have inaugurated to reclaim industrial work?

L. C. KUBACH,
Secretary,
Electrical Business Ass'n
Cleveland, Ohio.

REPLACE PLANT ELECTRICIANS

Editor,

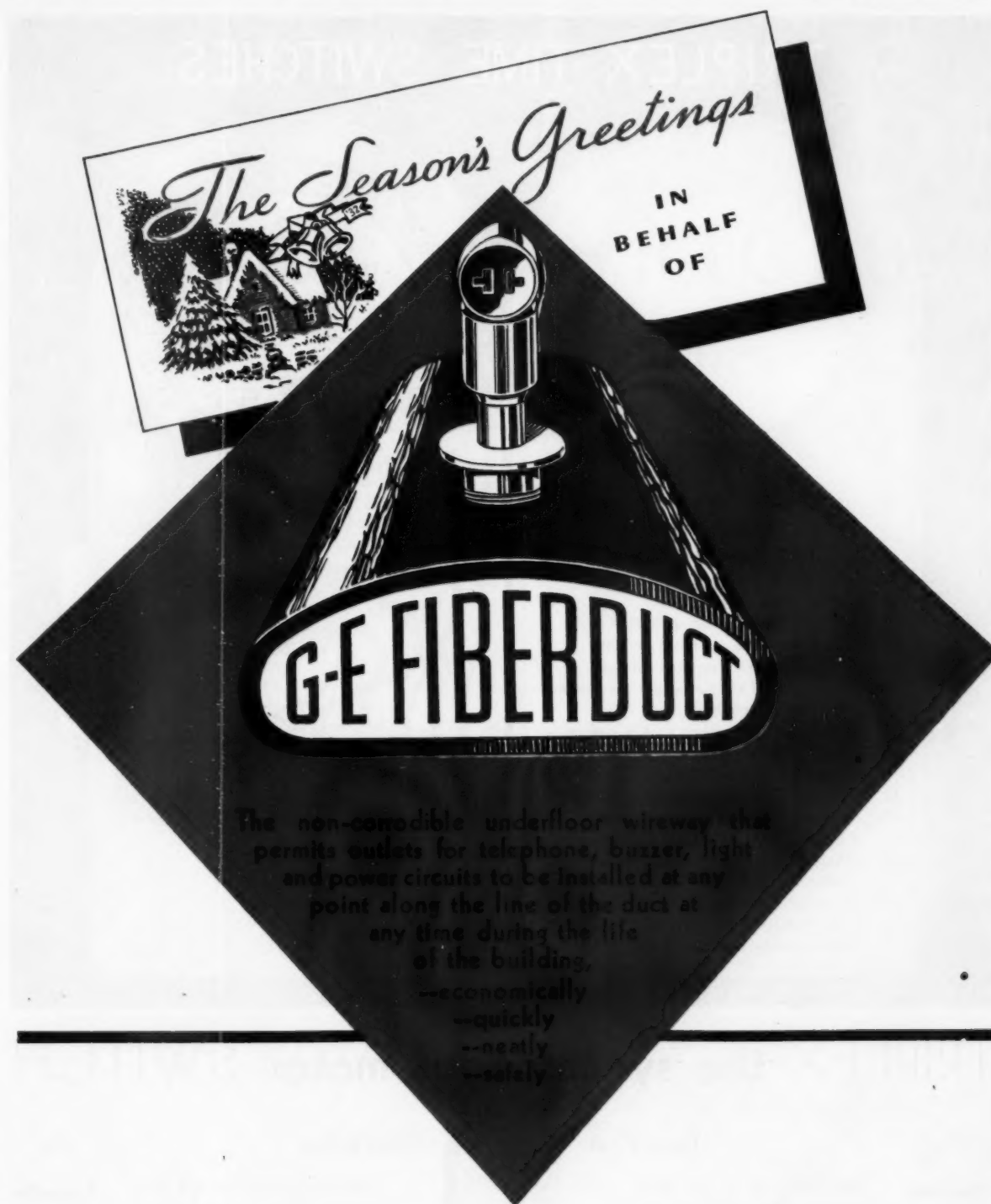
ELECTRICAL CONTRACTING:

The article "25 Reasons Why Industrial Electrical Contractors should Replace Plant Electricians" in your October issue is chock full of meat for the industry to digest.

It would be Utopia if electrical
(Continued on page 65)



—TURNS BUSINESS OVER TO HIS SON:—
T. J. Gleason, of Gleason Electric Company, Newport, Ky., has been an electrical contractor for thirty years in the same neighborhood. Although he still hangs around the shop he is proud to admit that he has turned over the business to his son, T. E. Gleason.



The Season's Greetings
IN
BEHALF
OF

G-E FIBERDUCT

The non-corrodible underfloor wireway that permits outlets for telephone, buzzer, light and power circuits to be installed at any point along the line of the duct at any time during the life of the building.

- economically
- quickly
- neatly
- safely

GENERAL  ELECTRIC
FIBERDUCT

MERCHANDISE DEPARTMENT, GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONNECTICUT

TRIPLEX TIME SWITCHES



ACCURATE ELECTRIC TIME

1. Waltham Watch Company movement
2. Self-starting synchronous motor
3. Silver finish dial, bronze numerals
4. Rotating seconds indicator
5. Tell-Tale interruption indicator
6. Thumb screw to set clock on time
7. 24 Hour rotating rim for clamps
8. ON and OFF clamps easily set around rim to control switching
9. Mercoid snap action switch mechanism for tilting mercury tubes
10. Independent hand throw for switching
11. ON and OFF switch position markings
12. Mercoid enclosed mercury tubes
13. 2 screws; a demountable mechanism
14. Moulded terminal blocks for wiring connections
15. Cadmium plated steel housing, gasketed, padlockable, sealable, knockouts
16. Glass window with bead and reflector

TRIPLEX the synchronous motor SWITCH

An
Accurate
Electric
Clock

Combining all of the best features that make for accurate electric time—Self-starting synchronous motor, current interruption tell-tale indicator, and highest quality made in America Waltham movement.

Two Year



Write for Bulletin 10-C

Guarantee

Featuring Mercoid mercury tubes with a snap action switch mechanism, close setting with operation exactly at minute desired, extra on and off clamps for additional operations and 24-hour setting rim.

An
Accurate
Electric
Switch

TRIPLEX PRODUCTS CORPORATION, Clifton, N. J.

Suggested RESALE PRICES *for* Wiring Supplies

The prices listed on the following pages are merely suggested resale prices for the commonly used standard supplies and equipment employed in electrical construction work. They are based on average current trade costs throughout the country, very largely obtained from jobbers' price sheets, and are also based on average overhead charges.

* * *

Obviously, prices can be suggested only for the widely used products that are nationally distributed, and under no circumstances is this section intended to function as a directory of products or manufacturers.

* * *

The publishers wish to again emphasize that these are merely *suggested* resale prices and while every effort is made to make them universally applicable and accurate we cannot guarantee them or assume any responsibility for errors.

* * *

The prices appearing in this section will be completely revised each month as trade prices may change.

These prices apply only to the United States.

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by the

Electrical Trade Publishing Co.

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COVERS				For Octagon or Round Boxes	
				Black	Galvd.
24C-1	3 1/2"	Blank Cover Flat		\$0.05	\$0.08
24C-2	3 1/2"	" Raised		.06	.08
24C-3	3 1/2"	" Flat with 1/2" K. O. in Center		.06	.08
24C-4	3 1/2"	" Raised		.07	.09
24C-12	3 1/2"	Raised Drop Cover with 1/2" Metal Bushing		.07	.09
24C-28	3 1/2"	Spider Cover for Switch or Receptacle		.08	.10
24C-31	3 1/2"	" Federal Sign		.07	.09
24C-33	3 1/2"	" Flat 1 1/2" hole for other		.20	.22
24C-35 & 36	3 1/2"	" Raised		.07	.09
24C-39	3 1/2"	" Flat for Ruted devices		.18	.20
54C-1	4"	Blank		.06	.09
54C-2	4"	" Raised		.07	.10
54C-3	4"	" Raised Open 1/2" Deep		.10	.10
54C-6	4"	" Flat with 1/2" K. O. in Center		.07	.10
54C-7	4"	" Raised		.09	.11
54C-12	4"	Raised Drop with 1/2" Metal Bushing		.08	.10
54C-28	4"	Spider for Switch or Receptacle		.09	.11
54C-31	4"	" Federal Sign		.08	.11
54C-33	4"	" Flat 1 1/2" Hole for Std. Ring		.11	.13
54C-35-6	4"	" Raised		.08	.11
54C-39	4"	" Flat for Fluted Devices		.20	.22
54C-45	4"	" Raised 1/2" High Open Plaster Ring		.08	.11

OUTLET BOXES—Square				Price	
Universal No.	Size and Description	Depth	Knockouts Bottom Side	Black	Galvd.
51151	4" Sq. Comb. Gas & Elect.	1 1/2"	5-1/2" 8-1/2"	\$0.17	\$0.20
51151	4" " "	1 1/2"	5-1/2" 8-1/2"	.19	.22
52151	4" Conduit Box	1 1/2"	5-1/2" 10-1/2"	.17	.20
52151	4" " "	1 1/2"	5-1/2" 10-1/2"	.19	.23
52171	4" " "	2 1/2"	6-1/2" 10-1/2"	.36	.43
72151	4 1/2" " "	2 1/2"	6-1/2" 10-1/2"	.43	.51
72171	4 1/2" " "	2 1/2"	6-1/2" 10-1/2"	.51	.61

COVERS For Square Boxes				Price	
				Black	Galvd.
52C-1	4" Sq. Blank Flat			\$0.08	\$0.11
52C-2	" Raised			.11	.14
52C-3	" Raised 1/2" High Open Plaster Ring			.14	.16
52C-6	" Flat with 1/2" K. O. in Center			.11	.13
52C-7	" Raised Drop with 1/2" K. O. in Center			.15	.18
52C-12	" Raised Drop with 1/2" Metal Bushing			.13	.15
52C-13	" " for Switch or Recept.			.11	.13
52C-14	" " " "			.12	.14
52C-15	" " " "			.17	.20
52C-16	" " " "			.19	.22
52C-17	" " " "			.16	.19
52C-18	" " " "			.17	.20
52C-19	" " " "			.22	.24
52C-21	" " " "			.24	.26
52C-28	" Flat Spider for Snap Switches			.17	.19
52C-31	" Raised for Sign Rec.			.10	.11
52C-35-36	" " " "			.15	.18
52C-39	" Fluted Devices			.27	.30
52C-48	" with 2 1/4" Opening Plaster Ring			.12	.14
52C-57	" For French Fixture			.33	.36
52C-62	" Single Sw. 1/4" High			.10	.13
72C-1	4 1/2" Sq. Blank Flat			.28	.32
72C-2	" Raised			.32	.36
72C-3	" Raised Open			.35	.38
72C-7	" With 1/2" K. O. in Center			.35	.38
72C-12	" Drop 1/2" Bushing			.35	.38
72C-14-15	" 1/4" & 1" for Switch or Rec.			.37	.40
72C-18	" " 2 Devices			.30	.33
72C-48	" Open 1/4" High			.35	.38
Special	Cover for One Push or Toggle Switch or Single Duplex Receptacle			.22	.27
For Red Seal Work	Cover Two Push or Toggle Switches or Two Receptacles or Any Combination of Two Devices			.36	.40

EXTENSION RINGS For Octagon & Square Boxes				Price	
				Black	Galvd.
25151	3 1/2" Octagon Ring—1 1/2" Deep			\$0.23	\$0.25
53151	4" " or Square Ring 1 1/2" Deep			.25	.28
73151	4 1/2" Square Ring 1 1/2" Deep			.59	.60
53171	4" Octagon Ring 2 1/2" Deep			.43	.48
53171	4" Square " 2 1/2"			.70	.70
73171	4 1/2" Square " 2 1/2"			.65	.65

HANDY OR UTILITY BOXES & COVERS For Use With Rigid Conduit				Price	
Description	Universal Numbers			Black	Galvd.
Box 3 1/2" x 1 1/2" x 1 1/2" For Rigid Cond.	58151			\$0.22	
Box 4 1/2" x 1 1/2" x 1 1/2" For Rigid Cond.	58361			.24	
Box 4 1/2" x 1 1/2" x 1 1/2" For Rigid Cond.	58371			.22	
Box 4 1/2" x 1 1/2" x 1 1/2" For Rigid Cond.	58371			.22	
Cover Flat Steel Closed	58C1			.10	
Cover Porcelain with Holes				.13	
Cover Raised for Flush Plug Recept.				.30	
Cover for Sgle. Receptacle	58C5			.19	
Cover for Duplex Receptacle	58C7			.19	
Cover for Toggle Switch	58C30			.19	
Cover for Sgle. Push Switch	58C3			.19	
Cover for Sign Receptacle	58C33			.18	
Cover for Snap Switches	58C28			.18	
Cover with 1/2" K. O.	58C6			.16	
Cover with 1/2" or 3/4" Nipple				.27	
Cover with Bushing for Cord	58C11			.16	

CONCRETE BOXES—Galvanized Only				Price	
Box & Back Plate with 1/2" Stud.	Depth 1 1/2" 2" 2 1/2" 3" 3 1/2" 4" 5" 6"			Black	Galvd.
Box & Back Plate with 1/2" Stud.	.25 .30 .32 .35 .39 .42 .51 .60				
Plate only 4 1/2" Diam. without Fixture Stud 3 1/2" and 2 1/2" K. O.				.11	
Plate only 4 1/2" Diam. with 1/2" Fixture Stud 3 1/2" and 2 1/2" K. O.				.16	
Plate only 4 1/2" Diam. with 1/2" Fixture Stud 3 1/2" and 2 1/2" K. O.				.20	

SOLID GANG BOXES				Price	
Covers Extra					
Galvd. Only	2	3	4	5	6
Box Price	\$.85	\$1.20	\$1.60	\$2.15	\$4.15
Cover	.40	.60	.80	1.00	1.95

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BOXES, OUTLET

NEW CODE OUTLET BOXES

Size	Stud	Clamps	Bush Plates	Price
3 1/2" x 1 1/2" Round	Yes	Two	No	\$0.23
3 1/2" x 1 1/2" Round	No	Two	No	.23
3 1/2" x 1 1/2" Round	Yes	Two	Two	.27
3 1/2" x 1 1/2" Octagon	No	Two	Two	.16
3 1/2" x 1 1/2" Octagon	Yes	Two	Two	.30
3 1/2" x 1 1/2" Round	No	Two	No	.18
3 1/2" x 1 1/2" Round	Yes	Two	Two	.15
3 1/2" x 1 1/2" Octagon	No	Two	Two	.23
3 1/2" x 1 1/2" Octagon	Yes	Two	Two	.27
4 1/2" x 1 1/2" Octagon	No	Two	Two	.27
4 1/2" x 1 1/2" Octagon	Yes	Two	Two	.24
G.E. Cable Boxes for Straight Electric or Combination No. 5200-01				.20
Hope Cable Boxes for Straight Electric or Combination No. 2 & 4 & 14				.20
Thomas & Betts No. 565-66-67-68 Standard Cable Boxes				.25
Thomas & Betts No. 553-554 Dead Ground Cable Boxes				.35
Thomas & Betts No. 160-161 Flush Wall Type Cable Boxes				.50

BAR HANGERS FOR OUTLET BOXES
Boxes Extra

(With 1/2" Fixture Stud)	Price
(With 1/2" Stud add 5c ea.)	
Straight Bar 18" Long	\$0.22
Straight Bar 24" Long	.30
Shallow Offset Bar 19 1/2" Long	.26
Shallow Offset Bar 24" Long	.35
Deep Offset Bar 19 1/2" Long	.26
Deep Offset Bar 24" Long	.35
Straight Old Work Bar 12"	.15
Box Cleat Bar 21"	.12
Straight Saddle Bar	.20

SET-UP BOXES WITH BARS

Size	Ears	Clamps	Bush Plates	Price
3 1/2" x 1 1/2" Round	No	None	None	\$0.30
3 1/2" x 1 1/2" Round	No	Two	None	.35
3 1/2" x 1 1/2" Round	Yes	None	None	.35
3 1/2" x 1 1/2" Round	Yes	Two	None	.40
3 1/2" x 1 1/2" Oct.	Yes	Two	None	.45
3 1/2" x 1 1/2" Oct.	Yes	Two	Two	.50
3 1/2" x 1 1/2" Round	No	Two	None	.45
3 1/2" x 1 1/2" Round	No	Two	Two	.45
4 1/2" x 1 1/2" Oct.	Yes	Two	None	.50
4 1/2" x 1 1/2" Oct.	Yes	Two	Two	.50
4 1/2" x 1 1/2" Round	No	None	None	.30
4 1/2" x 1 1/2" Round	Yes	None	None	.35

BUSHINGS & LOCKNUTS

BUSHINGS & LOCKNUTS For Rigid Conduit

Locknuts—Each	1/2"	3/4"	1"	1 1/4"	1 1/2"
Bushings—Each	\$.01	\$.01 1/2	\$.02 1/2	\$.04	\$.07
Locknuts—Each	1 1/2"	2"	2 1/2"	3"	3 1/2"
Bushings—Each	\$.05 1/2	\$.09	\$.14	\$.24	\$.30
	.08	.14	.21	.32	.42

PORCELAIN CLAMP BUSHINGS "Federal" or Equivalent

Cat. No.	K. O.	Inside Size	Outside Size	Wire Size	Bushing Each	Extra Ring Each
A-1	1/2"	1/2"	1/2"	No. 10	\$.08	\$.04
A-2	3/4"	3/4"	3/4"	No. 10	.10	.04
A-3	1"	1"	1"	No. 8	.10	.04
A-4	1 1/4"	1 1/4"	1 1/4"	No. 3	.12	.05
A-5	1 1/2"	1 1/2"	1 1/2"	450 CM	.22	.10
A-6	2"	2"	2"	1 Mill. CM	.45	.12
B-1	1/2"	1/2"	1/2"	No. 10	.20	.04
K-1	3/4"	3/4"	3/4"	No. 10	.32	.04
K-2	1"	1"	1"	No. 8	.37	.05

"MULTI" PORCELAIN CLAMP BUSHINGS

Cat. No.	Inside Size	Outside Size	For Wires	Price Each Complete
10	1/2"	1/2"	No. 14 B & S	\$0.08
12	3/4"	3/4"	No. 14 B & S	.12
15	1"	1"	No. 14 B & S	.10
20	1 1/4"	1 1/4"	No. 6 B & S	.10
30	1 1/2"	1 1/2"	No. 2 B & S	.12
40	2"	2"		.20
50	2 1/2"	2 1/2"	350,000	.30
55	3"	3"	600,000	.38
60	3 1/2"	3 1/2"	1,000,000	.45

PORCELAIN NO CLAMP BUSHINGS Multi- With Spring Clip, Not Threaded

Catalog No.	Multi	90A	90B	91	92A	92B
Size of Wire Hole	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
To Fit K. O.	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Price	\$.06	\$.06	\$.06	\$.07	\$.07	\$.07

These prices apply only to the United States

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Boxes, Floor

THREADED COMPOSITION BUSHINGS									
For Entrance, Cut-outs and Panel Boxes									
Size	1/4"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
Without Locknut.....	\$.05	\$.11	\$.12	\$.14	\$.16	\$.18	\$.25	\$.45	\$.80
With Locknut.....	.08	.14	.15	.18	.25	.70	1.10		
Socket Bushings									
Black Composition.....	1/4"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
For Sockets.....	\$.02	\$.02	\$.04	\$.08					

BOXES, FLOOR

NON-ADJUSTABLE TYPE						
Latrobe Fullman Mfg. Co.	R. & S. Russell & Stoll	Steel City Steel City Co.	Description		Price	
100	2590	400	Comp. Out. Less Std. Recep. with Stem Nozzle		\$3.70	
101	2590	490	" " " " " " " "		2.70	
110	2580	477	" " " " " " " "		4.10	
112	2581	493	" " " " " " " "		5.60	
113	.....	491	" " " " " " " "		5.80
300	.....	490	Midget Out. with 10A Recep. no Nozzle		2.50
ADJUSTABLE TYPE						
140	2502	400	Complete—Standard Box—Less Receptacle		\$5.35	
150	2503	401	" " " " " " " "		5.35	
120	.....	....	" " " " " " " "		5.35
130	.....	....	" " " " " " " "		5.70
ADJUSTABLE GANG TYPE						
251	2511	441	Spl. Gang Less Recep. with 1/2" Cov. Plate		\$ 6.75	
252	2512	442	" " " " " " " "		13.20	
253	2513	443	" " " " " " " "		19.45	
254	2514	444	" " " " " " " "		35.90	
255	2515	445	" " " " " " " "		32.00	
256	2516	446	" " " " " " " "		38.40	

NOZZLES									
For All Types of Floor Boxes									
253	2686	400	For Duplex Tel. with 1/2" Brass Pipe				\$4.35		
254	2686	468	" " " " " " " "				5.70		
255	2684	468B	" " " " " " " "				2.70		
274	2617	....	3" High with Wire Slot & Screw Cap				2.30		
295	....	....	For Duplex Recep. with 1/2" Brass Pipe				8.25		
206	2557	467	Standard Stem Nozzle				1.15		
207	2558	466	" " " " " " " "				1.15		
270	....	....	Stem Nozzle for Armored Cable				1.15		
271	2617	....	" " " " " " " "				1.65		
272	1945	....	" " " " " " " "				1.90		
280	....	....	Single Recep. Nozzle				4.10		

G. E. & T. & B. BOXES									
G. E.	T. & B.	Description		Price					
8000	8000	Utility Outlet Box Non-Adjustable.....		\$1.00					
8200	1700	Two Wire Fir. " " " " " " " "		4.00					
8220-40	1701-2	Three " " " " " " " "		5.50					
8300	1703	Extension " " " " " " " "		2.75					
8400	1730-60	Two Wire " " " " " " " "		6.25					
8420-40	1731-61-3	Three " " " " " " " "		7.25					
8500	1733-63	Telo. or Signal Floor Box Adj.-Deep or Shallow..		5.00					

"BUSHED ELBOWS"—"BULB TEES"—FLOOR COUPLINGS									
Bushed Elbows Iron.....	1/2"	3/4"	1"	1 1/4"					
"Bulb" Tees.....	\$0.60	\$0.90	\$1.15	\$1.45					
Floor Coupling Brass.....	1.40	1.65	2.00	4.35					

BOXES, CUTOUT

TYPE "A" STEEL SURFACE CUTOUT BOXES									
Black									
Width Length.	3"	4"	6"	8"	10"	12"	14"	16"	18"
Short Side	3"	4"	6"	8"	10"	12"	14"	16"	18"
4 1/2	8	8	8	8	8	8	8	8	8
4 1/2	9	9	9	9	9	9	9	9	9
4 1/2	9 3/4	9 3/4	9 3/4	9 3/4	9 3/4	9 3/4	9 3/4	9 3/4	9 3/4
6	6	6	6	6	6	6	6	6	6
6	8	8	8	8	8	8	8	8	8
6	9	9	9	9	9	9	9	9	9
6	12	12	12	12	12	12	12	12	12
8	8	8	8	8	8	8	8	8	8
8	10	10	10	10	10	10	10	10	10
8	12	12	12	12	12	12	12	12	12
9	9	9	9	9	9	9	9	9	9
9	12	12	12	12	12	12	12	12	12
10	10	10	10	10	10	10	10	10	10
10	12	12	12	12	12	12	12	12	12
10	15	15	15	15	15	15	15	15	15
10	18	18	18	18	18	18	18	18	18
12	12	12	12	12	12	12	12	12	12
12	15	15	15	15	15	15	15	15	15
12	18	18	18	18	18	18	18	18	18
12	24	24	24	24	24	24	24	24	24

For Galvanized Boxes Add 25% to above prices.

BELLS & BUZZERS

Ansonia									
Name	No.	Description	Buzzer	2 1/4"	3"	4"	Cow or Sleigh		
Ansonia	656	Sgle. Coil Non Adjust.	\$.40	\$.45	.....	.....	.....	.....	.....
Ansonia	657	Dble. Coil Non Adjust.	.50	.55	\$.60	.....	.....	.....	.....
Wizard	659	Dble. Coil Non Adjust.	.90	.95	1.05	\$1.35	\$1.65	.....	.....
Eureka	641	Dble. Coil Adjust. Class	.....	.....	.....	.....	.....	.....	.....
Acme	631	Dble. Coil Adjust. Class	.95	1.00	1.25	1.60	1.80	.....	.....
Eureka	621	A.....	1.35	1.40	1.50	1.80	2.10	.....	.....
Monitor	661	Dble. Wood Box Bell	1.20	1.35	1.40	1.65	1.85	.....	.....
Wizard	666	Round Type Monitor Bell.....	.....	.....	1.50	.....	.....	.....	.....
Ansonia	663	Watch Case Buzzer Round	1.25	.....	.....	.....	.....	.....	.....
Ansonia	664	Comb. Bell & Buzzer	1.00	1.00	1.10	.....	.....	.....	.....

Bells and Buzzers

BELLS AND BUZZERS—Continued									
Skeleton and Weatherproof Bells									
Size	2 1/4"	3"	4"	5"	6"	7"	8"	10"	12"
620 D.C. Skeleton	\$4.55	\$5.00	\$5.75	\$7.00	\$8.75	\$12.35	\$13.20	\$20.60	.....
622 D.C. Weatherprf	.....	.....	13.00	14.55	.....	15.15	30.30	\$40.55	.....
624 Wthprf. Trans. Bell	.....	.....	16.30	17.95	.....	21.85	37.10	42.30	.....

Edwards									
Name	No.	Size	Description	Buzzer	2 1/4"	3"	4"	Cow or Sleigh	Price
Nubel	735	2 1/4"	Two Coil Non-Adjust.—Gray Enam. Bell	.....	\$ .65	.....	.....	.....	.....
Dizie	736	2 1/4"	" " " " " " " "	.....	.60	.....	.....	.....	.....
"	739	2 1/4"	" " " " " " " "	.....	.95	.....	.....	.....	.....
Combelle	737	2 1/4"	" " " " " " " "	.....	.90	.....	.....	.....	.....
"	738	2 1/4"	Two Coil Non-Adjust.—Gray Enam. Bell & Buzz.	.....	1.15	.....	.....	.....	.....
Tubell	738	2 1/4"	Dble. Coil Non-Adjust.—Gray Enam. Two Bells	.....	1.20	.....	.....	.....	.....
Cadet	710	2 1/4"	Two Coil-Class B-Adjust. Bell	.....	1.00	.....	.....	.....	.....
"	715	2 1/4"	" " " " " " " "	.....	.95	.....	.....	.....	.....
"	712	2 1/4"	" " " " " " " "	.....	1.25	.....	.....	.....	.....
"	714	2 1/4"	" " " " " " " "	.....	1.60	.....	.....	.....	.....
Bun-A-Bell	730	2 1/4"	" " " " " " " "	.....	1.80	.....	.....	.....	.....
Monitor	156	3"	Two-Coil-Class C Comb. Bell & Buzzer	.....	1.20	.....	.....	.....	.....
Bronx	750	1 1/4"	Monitor Bell-Nickel Plated Gong	.....	1.50	.....	.....	.....	.....
Buzzer	16	.....	Nickel Watch Case Buzzer	.....	1.25	.....	.....	.....	.....
"	.....	.....	Flush Buzzer fits Standard Switch Box	.....	2.40	.....	.....	.....	.....

Skeleton D. C. & Transformer Inside Bells & Buzzers									
Size	3"	4"	6"	8"	10"	12"			
17 "Economy" Skelet. Bells	\$5.50	\$6.75	\$8.75	\$14.25	\$21.25	\$27.50	.....	.....	.....
510 A. C. Transformer	9.40	10.15	18.90	23.45	41.90	48.00	\$7.00	.....	.....

Edwards—Lungen									
No. 13 Bells									
Size	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	Price
.....	\$2.00
.....	1.80
.....	1.90
.....	3.00
.....	3.20
.....	9.80
.....	2.25

No. 15 Buzzers									
No.	.....	.....	.....	.....	.....	.....	.....	.....	Price
No. 1.....	.....	.....	.....	.....	.....	.....	.....	.....	\$1.85
No. 2.....	.....	.....	.....	.....	.....	.....	.....	.....	1.60
No. 3.....	.....	.....	.....	.....	.....	.....	.....	.....	1.70
No. 4.....	.....	.....	.....	.....	.....	.....	.....	.....	2.00
No. 5.....	.....	.....	.....	.....	.....	.....	.....	.....	2.20

Partrick & Wilkins	
Iron Box Bells	
Small 2 1/4" Iron Box Bell Non-Adjust. Dble. Magnet	\$.40
Small 3" Iron Box Bell Non-Adjustable Double Magnet .....	.55
Fancy Gong Cow or Sleigh Non-Adjust. Dble. Magnet	1.65
King Monitor Bell	1.00
6" Large Iron Box Bell for Battery Current	6.50
.....	8.00

PL-8

Brackets and Racks

UNIVERSAL RACK UNITS	
Rack Foot.....	\$0.20
4' Extension.....	.25
8' ".....	.35
12' ".....	.45

INSULATOR SUPPORTS			
Universal			
Size	Price	Size	Price
1".....	\$0.24	2 1/2".....	\$0.55
1 1/2".....	.40	1 1/2".....	.50
2".....	.60	2".....	.65

WOOD BRACKETS & PINS			
Standard			
Wood Brackets			
1 1/2"x2"x10".....	\$0.07	1 1/2"x2"x12".....	\$0.08
1 1/2"x2"x12".....	.08	2"x2 1/2"x12".....	.10
1 1/2"x2 1/2"x12".....	.09	2"x2 1/2"x12".....	.10
		3"x3"x12".....	.15
Pins			
Locust 1 1/2"x8".....	\$0.06	Locust 1 1/2"x9".....	\$0.10
Oak 1 1/2"x8".....	.05	Oak 1 1/2"x9".....	.08

B-SUNDRIES, BOLTS, ETC.

CARRIAGE BOLTS	
Galvanized	
Diam.	Length
3/4" Diam. Each..	3" \$0.03 3 1/2" \$0.04 4" \$0.04 4 1/2" \$0.05 5" \$0.05 5 1/2" \$0.06 6" \$0.07
1" ".....	3" .06 3 1/2" .07 4" .07 4 1/2" .08 5" .08 5 1/2" .09 6" .10

MACHINE BOLTS WITHOUT WASHERS	
Galvanized	
Diam.	Length
3/4" Each.....	3" \$0.04 4" \$0.05 5" \$0.06 6" \$0.07 7" \$0.08 8" \$0.09 10" \$0.11 12" \$0.12 14" \$0.13 16" \$0.14 18" \$0.15
1" ".....	3" .08 4" .09 5" .10 6" .11 7" .12 8" .13 10" .15 12" .17 14" .19 16" .21 18" .23
1 1/4" ".....	3" .13 4" .14 5" .15 6" .16 7" .17 8" .18 10" .21 12" .23 14" .25 16" .27 18" .29
1 1/2" ".....	3" .22 4" .24 5" .26 6" .28 7" .30 8" .32 10" .35 12" .37 14" .39 16" .41 18" .43

FLAT CROSS ARM BRACES	
Galvanized	
Diam.	Length
1 1/2"x1/4".....	20" \$0.20 22" \$0.20 24" \$0.25 26" \$0.25 28" \$0.30 30" \$0.30 32" \$0.35
1 3/4"x1/4".....	20" .20 22" .25 24" .25 26" .30 28" .30 30" .35 32" .35

STOVE BOLTS	
Round or Flat Head	
Length	Diameter
Up to 1" Long Per Dozen.....	1/4" \$0.10 1/2" \$0.10 3/4" \$0.12 1" \$0.15 1 1/4" \$0.20
1 1/4" to 1 1/2" ".....	1/4" .10 1/2" .10 3/4" .12 1" .15 1 1/4" .20
1 1/2" to 2" ".....	1/4" .10 1/2" .10 3/4" .12 1" .15 1 1/4" .20
2" to 3" ".....	1/4" .10 1/2" .10 3/4" .12 1" .15 1 1/4" .20
3" to 4" ".....	1/4" .10 1/2" .10 3/4" .12 1" .15 1 1/4" .20

TOGGLE BOLTS, STEEL	
"Paine"	
Size—Diameter	Long
1/4" Long Price Each.....	2" \$0.10 3" \$0.10 3 1/2" \$0.10 4" \$0.10 5" \$0.10 6" \$0.10
1/2" ".....	2" .10 3" .10 3 1/2" .10 4" .10 5" .10 6" .10
3/4" ".....	2" .10 3" .10 3 1/2" .10 4" .10 5" .10 6" .10
1" ".....	2" .10 3" .10 3 1/2" .10 4" .10 5" .10 6" .10
1 1/4" ".....	2" .11 3" .11 3 1/2" .11 4" .11 5" .11 6" .11
1 1/2" ".....	2" .11 3" .11 3 1/2" .11 4" .11 5" .11 6" .11
1 3/4" ".....	2" .11 3" .11 3 1/2" .11 4" .11 5" .11 6" .11
2" ".....	2" .13 3" .13 3 1/2" .13 4" .13 5" .13 6" .13

NOTE: For Brass Toggle Bolts—2 1/2 times above prices.

REDUCING WASHERS	
For Outlet Boxes & Steel Cabinets	
Reducing Washers	Price
Thomas & Betts.....	3/4" 1" 1 1/4" 1 1/2" 2" 2 1/4"
R. H. Green.....	\$0.02 \$0.02 \$0.03 \$0.04 \$0.05 \$0.06
	.02 .04 .07 .08 .10 .15

K. O. SEALS	
For Outlet Boxes & Steel Cabinets	
For Closing 1/4" K. O.....	\$0.04
For Closing 3/4" K. O.....	.06
For Closing 1" K. O.....	.08
Ceiling Button—P & S Porcelain No. 170—Each.....	.12
Switch Bases—See Snap Switches Page PL-19.	

CORDS, FIXTURE, LAMP AND HEATER

FIXTURE CORD—ONE WIRE	
Type	Price Per Foot
Cotton Covered—Light.....	No. 18 \$0.01 No. 16 \$0.02 No. 14 \$0.03 No. 12 \$0.04
Cotton Covered—Heavy.....	F-32 .01 1/2 .02 1/2 .03 .04
Artificial Silk—Light.....	F-64 .01 1/2 .02 1/2 .03 .04
Artificial Silk—Heavy.....	F-32 .01 1/2 .03 .04 .04 .04

These prices apply only to the United States

Conduit

LAMP CORD—TWO WIRE	
Type	Price Per Foot
Cotton Covered Twisted Pair.....	No. 18 \$0.02 No. 16 \$0.03 No. 14 \$0.04 No. 12 \$0.06
" " Parallel Pair.....	PD .02 1/2 .04 .05 .06
" " Twisted Pair.....	PD .03 .05 .06 .07
Artificial Silk Twisted Pair.....	C .02 1/2 .04 .05 .06
" " Parallel Pair.....	PO .02 1/2 .05 .07 .08

LAMP CORD, REINFORCED—TWO WIRE	
Type	Price Per Foot
Cotton Covered Light Type 1/4" PS.....	No. 18 \$0.03 No. 16 \$0.04 No. 14 \$0.07 No. 12 \$0.12
" " Heavy 1/4" PS.....	P .04 .06 .07 .08
Weatherproof.....	1/4" PSWP .03 1/2 .04 .05 .06
	1/4" PWP .05 .07 .08 .09

HEAVY DUTY PORTABLE CORD	
"Duracord" or Similar.	
Type	Price Per Foot
Type PS Light 2 Cond. Port. Cord.....	No. 18 \$0.07 No. 16 \$0.08 No. 14 \$0.10 No. 12 \$0.12 No. 10 \$0.16
" P Heavy 2 " " " ".....	.08 .09 .10 .12 .15
" P 3 " " " ".....	.10 .12 .15 .20

ALL RUBBER CORD	
"Tirez" "Royal" "Super-Service" or Similar	
Type	Price Per Foot
SJ Junior 2 Conductor Black.....	No. 18 \$0.06 No. 16 \$0.08 No. 14 \$0.10 No. 12 \$0.12 No. 10 \$0.16
" " 2 " Green.....	.07 .10 .12 .14 .16
" " 2 " Black.....	.11 .14 .16 .18 .20
S Type Heavy 1 Conductor Black.....	.07 .08 .09 .10 .12
" " 2 " " ".....	.10 .13 .15 .18 .22
" " 3 " " ".....	.14 .15 .17 .19 .21
" " 4 " " ".....	.15 .17 .19 .21 .23

HEATER CORD	
Type	Price Per Foot
Asbestos Covered Two Wire.....	No. 18 \$0.05 No. 16 \$0.06 No. 14 \$0.08 No. 12 \$0.10
Stand. Twisted or Wound Asbest. 1/4".....	.05 .06 .08 .10
American Beauty Heater Cord Super.....	.07 .08 .10 .12
Flexible.....	.07 .08 .10 .12
Rockbestos Heater Cord.....	.07 .08 .10 .12
Universal No. 9002 Super Flexible.....	.07 .08 .10 .12

"Deltabeston" Heater Cord Two Wire	
Type	Price Per Foot
Type A Asbestos Braid Loco Cab.....	No. 18 \$0.08 No. 16 \$0.10 No. 14 \$0.12 No. 12 \$0.14
Cord.....	.08 .10 .12 .14
" C Cotton Braid.....	.06 .07 .08 .09
" D " on ea. cond.....	.07 .08 .09 .10
" E Cotton on ea. Cond. & over.....	.08 .09 .10 .11
both.....	.08 .09 .10 .11

NOTE—For Armored Cords See Page PL-9.
" Extension Cords See Page PL-10.
" Fixture Wire See Pages PL-26 & 27.
" Bell Wire See Page PL-27.

MISCELLANEOUS CORDS	
Description	Price Per Foot
Brewery Cord.....	Type No. 18 \$0.02 No. 16 \$0.03 No. 14 \$0.04 No. 12 \$0.05 No. 10 \$0.06
Canvasite Cord.....	CC .03 .04 .05 .06 .07
Deck Cable.....	PWP .05 .07 .10 .12 .14
Packinghouse Cable.....	PKWP .03 .04 .05 .06 .07
Stage & Theatre Cable.....	T .03 .04 .05 .06 .07
Packinghouse and Stage Cable.....	K .03 .04 .05 .06 .07
Type "K" replaces Brewery, Canvasite and Packinghouse Cable, which are no longer approved by N. E. Code.	

BELL CORD	
Spun Silk	
Number of Conductors	Price Per Foot
2 3 4 5 8 10 14 18	Cond. Cond. Cond. Cond. Cond. Cond. Cond. Cond.
Price Per Foot.....	\$0.08 \$0.15 \$0.20 \$0.21 \$0.25 \$0.35 \$0.50 \$0.70

Note—For Armored Lamp Cord See Page PL-9.

CONDUIT, ELBOWS, COUPLINGS, BUSHINGS, ETC.

RIGID CONDUIT	
Black	Galvd.
Per Foot	Per Foot
1/2".....	\$0.09 \$0.11
3/4".....	.11 .12
1".....	.16 .17
1 1/4".....	.22 .24
1 1/2".....	.26 .29
2".....	.35 .39
2 1/2".....	.55 .62
3".....	.72 .80
3 1/2".....	.92 1.03
4".....	1.12 1.23

Electrical Contracting, January, 1932

THIN WALL CONDUIT

NOTE—No Coupling is included in the above thin wall prices.

Price Each

Also on Page PL-10.

FLEXIBLE METALLIC CONDUIT
Greenfield", "Flexsteel", or Similar

For Non-Metallic Conduit or Loom See Page PL-18.
For Steel Armored Cable & Lead Covered See Next Item.

For Pipe Straps, see Page PL-25. For Solder, Sticks, etc., Page PL-25.

	Size—No 8	Per Foot No. 6	No. 4
Three Conductor Stranded Service Cable.....	\$.30	\$.40	\$.50

	7 ounce Cans	15 ounce Cans	30 ounce Cans	1/2 Pint Bottle	1 Pint Bottle	Quart Bottle
Crescent (McGill).....				\$1.25	\$2.50	\$5.00
Celco.....	\$2.50	\$4.00	\$7.50			
Franco.....				1.25	2.25	4.00
Permacolor.....				1.55	3.00	5.00

THREADED CONDUIT FITTINGS

STANDARD TYPES, COVERS EXTRA
"Condulets" "Taplets" "Unilets" "Electrolets" "V. V."
"Adaptilets" Etc.

	Form 7	3/4"	1"	1 1/2"	1 3/4"
A		\$.32	\$.41	\$.57	\$.82
B		.38	.47	.66	1.65
C		.48	.54	.78	1.24
CO-COV		.86	.86	.99	1.65
		.35	.46	.66	1.06
		.66	1.06	1.65	2.90
LB-LF-LT-LR-LBB	Form 7	.53	.60	.86	1.39
LFB-LT-LR-LRB		.53	.60	.86	1.39
LBB-LBR		.86	1.06	1.25	1.65
		1.85	2.25	2.38	2.64
PC-PL		1.98	2.18	2.38	.....
PT		2.25	2.50	2.77	.....
PX		2.38	2.64	2.90	.....
T All One Size		.63	.75	1.05	1.61
TA All One Size		.92	.99	.92	2.05
TB-TL-TR		.63	.75	1.05	1.61
U-UB		.63	.71	1.03	1.66
X All One Size		.79	1.02	1.39	1.85
Gaskets		.13	.13	.20	.26
Reducers		.20	.20	.28	.40
Connectors CCT		.33	.40	.48	1.45
Unions U. N. Y.		.60	.66	.99	1.58

	Form 7	2"	2½"	3"	3½"	4"
A		\$3.19	\$5.30	\$6.20	\$10.10	\$11.15
B		3.43	5.20	6.95	8.68	15.57
C		3.21	5.95	7.69	11.16	13.64
CO-COV		4.29	6.45	9.80	15.62	17.11
E		2.83	5.20	6.20	10.10	11.15
F						
	Form 7	6.60	10.17	12.65	22.45	31.00
LB-LF-LI-LR-LBB		3.30	6.20	8.06	13.00	14.58
LFB-LLB-LRB		3.30	6.20	8.06	13.00	14.58
LFB-LBR-LWB		3.50	8.12			
T All One Size		3.36	6.20	9.30	13.65	16.12
TA All One Size		5.22	...	...	...	...
TB-TL-TR		3.36	6.20	9.30	13.65	16.12
U-UB		3.95	7.44	9.67	15.62	...
X All One Size		4.62	7.64	12.40	...	...
Caskets		35	50	62	...	...
Reducers		96	1.54	1.67	2.48	3.40
Connectors CCT		...	...	...	...	...
Unions U. N. Y.		3.63	5.69	...	...	...

COVERS

For Above

			\$½	\$¾	\$1	1¼
Porcelain Covers with Holes.....			\$.13	\$.20	\$.33	\$.47
Composition " " .....			.26	.40	.66	1.32
" " Blank .....			.40	.53	.79	1.45
Porcelain " For Drop Cord.....			.46	.53	.....	.....
" " Weatherproof.....			.21	.33	.....	.42
Metal Covers Black Sheet Steel.....			.11	.15	.36	.42
" " Cast Iron.....			.22	.30	.46	.68
" " with ½ Nipple.....			.26	.33	.46	.....
" " " " " " .....			.30	.37	.50	.....
" " " " " " .....			.33	.39	.53	.....
			1½	2	2½ & 3	3½ & 4
Porcelain Covers with Holes.....			\$.63	\$.79	\$1.06	\$1.19
Composition " "			1.45	1.58	2.12	2.30
" " Blank			1.58	1.85	4.29	5.94
Porcelain " For Drop Cord.....			.....	.....	.....	.....
" " Weatherproof.....			.....	.....	.....	.....
Metal Covers Black Sheet Steel.....			.60	.74	.90	1.05
" " Cast Iron.....			.92	1.19	1.52	1.65
" " with ½ Nipple.....			.....	.....	.....	.....
" " " " " "
" " " " " "

RECEPTACLES & ROSETTES

For Threaded & Threadless Fittings

Plug Receptacles	10 Amp. 2 Pole	350 Watt.	\$.53	\$.50	\$.66
"	"	15 " 2 " 125 "	.58	.90	.86
"	"	20 " 2 " "	.72	.79	.66
"	"	15 " 3 " 250 "	.79	.86	..
"	"	20 " 3 " 250 "	.79	.86	..
"	"	20 " 3 " 250 "	.99	1.05	..
Lamp Receptacle	660 Watt with Shade Holder.		.40	.46	.53
Cord Rosette			.40	.46	.53

FS SERIES FOR FLUSH DEVICES
Shallow Type Without Covers, Any Make

No. Gangs	No. Pipe Outlets	Series	3/4"	1/2"	1"
Single Gang	One	FS-FSA	\$.86	\$.99	\$1.12
" "	Two	FSC-FSL-FSR- FSLA-FSS-FSAA	.99	1.10	1.45
" "	Three	FSCA-FSCC- FSCST-FST	1.32	1.65	1.91
" "	Four	FSX-FSCD	1.58	1.98	2.24
Two Gang	One	FS-FSA	1.58	1.71	1.85
" "	Two	FSC-FSS	1.71	1.85	2.05
" "	Three	FSD	1.91	2.05	2.18
2 Gang Tandem	One	FS	2.18	2.31	2.44
" "	Two	FSC	2.31	2.44	2.57
Three Gang	One	FS-FSA	.....	2.35	2.57
" "	Two	FSC	.....	2.51	2.71
" "	Four	FSD	2.57	2.84	3.04
Four Gang	One	FS-FSA	.....	2.90	3.10
" "	Two	FSC-FSSE	.....	3.10	3.30
" "	Five	FSD	3.43	3.76	4.10

COVERS FOR FS FITTINGS

[illegible]

COMBINATION COVERS FOR FS SERIES

2	Gang for One Switch and one Sgle. or Duplex Receptacle.....	\$.66
2	" " " " Bull's Eye with Jewel	1.65
2	" " " " One lift cover Receptacle .....	.90

RECEPTACLES & PLUGS

Type	3 Pole, 250 Volt D. C.		300 Volt A. C.		Style 1	
Crouse-Hinds or Similar	15 Amp.	15 Amp.	30 Amp.	30 Amp.	60 Amp.	60 Amp.
QEE Receptacle	1 1/2"	1 1/2"	1"	1"	1 1/4"	1 1/4"
QEE " "	\$0.60	\$0.75	\$0.85	"	"	"
QEA " "	9.50	9.60	9.75	"	"	"
QAB " "	"	"	"	\$19.60	\$19.70	\$21.20
CP Watertight Plug	"	"	"	\$18.80	\$18.90	\$20.90
	9.10	9.10	9.10	11.50	11.50	16.85

	9-10	9-10	9-10	11-00	11-00
G & H WITHOUT ADJUSTABLE BAR					

Type Crosse Hinds or Similar	5 Amp.			10 Amp.		
	1/4"	3/8"	1"	1/4"	3/8"	1"
G.....	\$.53	\$.66	\$.99	\$.66	\$.86	\$1.12
GL.....	.59	.73	1.05	.73	.92	1.19
GA-GLA-GT.....	.79	.92	1.25	.92	1.12	1.39
GTA-GX.....	.99	1.12	1.58	1.12	1.32	1.72
GXA.....	1.19	1.32	1.85	1.32	1.52	1.98
H.....	.40	.53	.86	.53	.73	.99
HL.....	.59	.73	1.05	.73	.92	1.19
HH.....	.53	.66	.99	.66	.86	1.05
HHC.....	.79	.92	1.25	.92	1.12	1.39
HLA.....	.59	.73	1.05	.73	.92	1.19

Type

Crouse Hinds or Similar	1/4"	3/8"	1"
G.....	\$.92	\$.99	\$1.32
GL.....	.99	1.12	1.62
GA-GLA-GT.....	1.10	1.32	1.72
GTA-GX.....	1.30	1.58	2.11
GXA.....	1.58	1.85	2.38
H.....	.79	.86	1.19
HA.....	.86	.93	1.32
HH.....	.92	1.00	1.32
HHC.....	1.19	1.32	1.72
HLA.....	.99	1.12	1.52

G & H WITH ADJUSTABLE BAR

	Crouse Hinds or Similar			5 Amp.			10 Amp.		
	$\frac{1}{4}$ "	$\frac{3}{8}$ "	1"	$\frac{1}{4}$ "	$\frac{3}{8}$ "	1"	$\frac{1}{4}$ "	$\frac{3}{8}$ "	1"
GL.....	.73	.86	\$1.10	.58	\$1.06	\$1.32			
G.....	.70	.92	1.25	.92	1.12	1.39			
GA-GA-GT.....		1.12	1.45	1.58	1.82	2.18			
GTA-GX.....	1.19	1.32	1.78	1.32	1.52	1.91			
GXA.....	1.39	1.52	2.05	1.52	1.72	2.18			
H.....	.50	.73	1.05	.73	.92	1.10			
HA.....	.66	.70	1.12	.70	.99	1.25			
HH.....	.70	.86	1.10	.86	1.05	1.32			
HC.....	.99	1.19	1.52	1.12	1.32	1.58			
HLC.....	.70	.92	1.25	.92	1.12	1.39			

Type

Crouse Hinds or Similar	34"	30 Amp.	1"
G.	\$1.19	\$1.25	\$1.58
GA	.25	.25	.78
GA-GLA-GT.	1.45	1.39	1.98
GTA-GX.	1.65	1.85	2.38
GXA	1.85	2.11	2.64
H.	1.05	1.12	1.45
HA	1.12	1.19	1.58
HH	1.19	1.25	1.58
HHH	1.45	1.58	1.98
HHA	1.25	1.39	1.78

COVERS FOR G & H SERIES

Description	For G & H Fittings Without Adjustable Bar		For G & H Fittings With Adjustable Bar	
	5 Amp.	10 Amp.	20 Amp.	5 & 10 Amp.
Porcelain Cover with Wire Holes . . .	\$.28	\$.33	\$.53	\$.20
Blank Sheet Steel Cover . . .	.20	.26	.33	.13
" " Cast " " " "	.33	.40	.53	.26
Sheet Steel with 1/4" Brass Nipple . . .	.33	.40	.46	.26
" " " 1/2" " " " "	.40	.46	.53	.33
" " " 3/4" " " " "	.46	.53	.59	.40
" " " 1" " " " "	.53	.59	.66	.46
Receptacle Covers No Shadeholder . . .	.66	.66	..	..
" " " With " " " "	1.05	..	..	..

DEVICES FOR G & H SERIES

Lamp Receptacles one piece with or without Shadeholder Groove.....	\$.33
" " two " " " "	.66
" " " " without " "	.59
Cord Rosette Porcelain.....	.63
" " Composition.....	.60

J & K SERIES WEATHERPROOF

	1/2"	3/4"	1"
A-JB-JU	.70	.90	\$1.30
L	.92	1.12	1.52
1	1.12	1.25	1.30
T	1.25	1.30	1.52
X	1.30	1.52	1.75
K	.68	.86	1.25
K-KB-KC-KD	.79	.99	1.36

These prices apply only to the United States

Fittings, Conduit

Fittings, Threadless

Lamp Receptacle S. H. Groove.....	\$0.50
" " No S. H. Groove.....	.63
Plug Receptacle 10 & 15 Amp.....	.66
" " 20 86
" " 10 3-wire.....	.92
Cord Rosette.....	.46
Blank Cast Cover.....	.40

Prices include Globe & Guard

		Form 75		
		1/4"	3/4"	1"
V-VA & VDA	as above	\$5.60	\$5.65	\$5.70
VC & VL	" "	5.70	5.80	5.90
VE-VG & VT	" "	5.80	6.00	6.10
VX	" "	6.00	6.25	6.45
VF	" "	6.10	6.20	6.30
VD & VJ	" "	6.40	6.50	6.60

		Form 200		
		1/4"	3/4"	1"
V-VA & VDA	as above	\$6.70	\$6.75	\$6.80
VC & VL	" "	6.80	6.90	7.00
VE-VG & VT	" "	6.80	6.90	7.00
VX	" "	7.05	7.30	7.50
VF	" "	7.15	7.25	7.35
VD & VJ	" "	7.35	7.45	7.55

	Form	Price
	75	200
Globes only, clear glass	\$1.05	\$1.05
" " opal	1.45	2.25
" " green, bl or orange	2.25	3.45
" " ruby	1.45	3.85
Guards Cast Aluminum	2.40	2.95
Half Shades	1.00	2.30
Receptacle with Gasket55	.55
Reflector Holder Cast Aluminum65	.85
Adaptor	1.00	1.20

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Pendant or Bracket Fixture with Recep. Globe and Guard Form	75....	\$7.55
	200....	8.45

"Kondu" "Adaptilets" "Appleton" Crouse-Hinds or Similar

Size--	1/8"	3/8"	1"	1 1/8"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"
A Covers Extra.....	\$0.44	\$0.580	\$0.791	\$2.31	\$5.53	\$25	\$6.95	\$8.35	\$12.90	\$14.90
B " " " " " " " " " " " "	50	68	90	2.55	5.55	9.55	6.95	11.50	19.60
C " " " " " " " " " " " "	78	1.25	2.05	2.50	5.30	9.40	12.00	16.75	21.10
CO " " " " " " " " " " " "	90	1.24	2.44	3.55	3.30	6.50	10.00	14.00	18.00
E " " " " " " " " " " " "	50	.63	.88	1.45	1.95	3.90	6.95	8.35	12.90
LB-LL-LR-L " " " " " " " " " " " "	76	.92	1.32	2.20	3.05	5.40	9.55	12.40	18.60
LBL-LBR " " " " " " " " " " " "	1.19	1.67	2.18	.....	.....	.....	.....	.....	.....
TATB All 1 Size.....98	1.27	1.74	2.85	4.00	6.55	11.40	15.80	27.30
TA " " " " " " " " " " " "	1.35	1.74	2.34	.....	.....	.....	.....	.....	.....
TL-TR " " " " " " " " " " " "98	.80	1.74	.....	.....	.....	.....	.....	.....
U-UB " " " " " " " " " " " "86	1.05	1.50	2.50	3.40	6.10	.....	.....	.....
X All 1 Size.....	1.25	1.72	2.30	4.22	6.05	9.90	.....	.....	.....

Unions Thick Walls	\$.37	\$.53	\$.79	\$ 1.19	\$ 1.65	\$ 3.30	\$ 5.30	\$ 7.90	\$ 10.50	\$ 15.84
" Thin	.26	.40	.66	1.05	1.39	2.77
Conn. Thick	.26	.37	.76	.92
" Thin	.22	.33	.59
UCT Adapter	.05	.08	.13

For Flush Devices

Type	1/2"	One Gang 3/4"	1"	Two Gang 3/4"	Three Gang 3/4"	Four Gang 3/4"
FS	\$0.90	\$1.10	.....	\$1.72	\$1.91	\$2.57
FSA	.90	.....	.....	.....	.....	.....
FSC	1.25	1.52	\$1.01	1.98	2.18	2.90
FSD	.....	.....	.....	2.24	2.57	.....
FSL-FSR	1.25	1.52	.....	.....	.....	.....
FSA	1.25	.....	.....	.....	.....	.....
FSC	1.65	2.18	2.57	.....	.....	.....
FSX	2.04	2.84	3.23	.....	.....	.....

	With Adjustable Bar	Without Bar
G Form 5	1 1/2" \$0.96	\$0.77
	3 1/2" 1.20	1.00
G Form 10	3 1/2" 1.09	.90
	5 1/2" 1.40	1.20

J	$\frac{15}{14}$	\$1.05
		1.33
K	$\frac{15}{14}$.79

Fittings for Thin Wall Conduit are Only Made Up to and Including 2".

Small End	Large End	1 1/2"	1"	1 1/4"	1 1/2"	2"
Small End	1 1/2"	\$0.38	\$0.50	\$0.67	\$0.75	\$0.99
" "	1 1/4"	" "	.57	.71	.84	1.12
" "	1"	" "	" "	.76	.88	1.21
" "	1 1/2"	" "	" "	" "	1.07	1.35
" "	1 1/4"	" "	" "	" "	" "	1.43

FITTINGS, SPRAGULETS, WIRELETS OR T & B

Series 48

Description	G.E. Steel City or T & B Numbers	Price Each
Branch Box Rectangular for $\frac{1}{2}$ & $\frac{3}{4}$ " Conduit....	SP-48341	\$0.25
Cover Metal Flat Closed.....	SP-48C1	.10
" " " with $\frac{1}{2}$ " Knockout.....	SP-48C8	.10
" " " Pendant Type with $\frac{1}{2}$ " Bushing..	SP-48C3	.12
" " " Pendant Type with $\frac{3}{8}$ " Bushing.....	SP-48C11	.15
" " " with $\frac{1}{2}$ " Male or Female Nipple.....	SP-48C22 & 23	.20
" " " with $\frac{1}{4}$ " Male or Female Nipple.....	SP-48C23 & 25	.18
Cover Porcelain with one or two wire Holes.....	SP-48C75 & 76	.14
" " " three or four wire Holes.....	SP-48C77 & 78	.15

Series 14

Description	G.E. Steel City or T & B Numbers	Price Each
Body Octagonal Shape for $\frac{3}{8}$ " or $\frac{7}{8}$ " Conduit.....	SP-14241	\$0.35-
Cover Metal Flat Closed.....	SP-14C1	.10
" " Raised with $\frac{3}{8}$ " Knockout.....	SP-14C7	.10
Cover Metal Flat Pendant with $\frac{3}{8}$ " Bushing.....	SP-14C8	.12
" " " "	SP-14C11	.16
" " with $\frac{3}{8}$ or $\frac{7}{8}$ Male Nip.....	SP-14C22-24	.10
" " For all surface Mounted Devices.....	SP-14C28	.15
" " Raised for Sign Rectangular.....	SP-14C29-34-35-36	.25
" " Flat for all Fluted Devices.....	SP-14C30	.25
" " Porcelain with one or two holes.....	SP-14C75 & 76	.15
" " Three or Four Holes.....	SP-14C77 & 78	.15

Series 34

Description	G. E., Steel City or T & B Numbers	Price Each
Body Deep Octagonal Shape $\frac{1}{4}$ " & $\frac{3}{4}$ "	SP-3461	\$0.45
Cover Metal Blank Flat	SP-3481	.14
Cover Metal For Push Button Station	SP-3482 & 3	.14
" " Single Receptacle	SP-3485	.14
" " Standard Duplex Receptacle	SP-3487	.14
" " For GE 80 Amp. Polarized Plug Recep.	SP-3413	.14
" " Tumbler Switches	SP-3414	.18
" " Hubbell and H&H Tumbler Switches.	SP-3415	.18

SP-1410 Complete Coupling for 1 1/2" Conduit.....	Price \$.15
SP-1420 " " " 1 1/4" "25

FITTINGS, ENTRANCE OR SERVICE

	1½"	¾"	1"	1¼"
Ent. Ellis with Cov. Ser. 1100.....	\$0.35	\$0.40	\$0.50	\$0.55
" Fitt. with Cov. Ser. 270040	.45	.60	.75
Angle Ent. Fitt. with Cover Ser. 2700...	.45	.50	.60	.95
Signal Ent. Caps No. 2810-2811.....	.75	.80		
	1½"	2"	2½"	3"
Ent. Ellis with Cov. Ser. 1100.....	\$1.50	\$3.00		
" Fitt. with Cov. Ser. 2700	1.70	2.95		
" Angle Ent. Fitt. with Cov. Ser. 2700....	1.80	3.00	6.35	7.20
Signal Ent. Caps No. 2810-2811.....				\$5.00

These prices apply only to the United States

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FITTINGS, ENTRANCE OR SERVICE—Continued

"APPLETON"

	1/4"	1/2"	3/4"	1"	1 1/4"
FEB Elbow with Cov. 1700 & 1900.....	\$.30	\$.35	\$.40	\$.45	\$.50
FB Elbow with Cov. 1713 to 18.....	.35	.50	.60	.70	.85
PC End Fitt. with Cov. 1723-33-43.....	.20	.25	.30	.35	.40
AY Angle Fitt. 1950 to 54.....	.50	.55	.70	1.85	
LAY End Fitt. with Cov. 1790 to 94.....	.30	.35	.45	.80	
MF Reversible Fitt. 3200-3230.....	.45	.55	.75	1.30	

	1 1/4"	2"	2 1/2"	3"
FEB Elbow with Cov. 1700 & 1900.....	\$1.90	\$3.25	\$7.50	\$9.00
FB Elbow with Cov. 1713 to 18.....				
PC End Fitt. with Cov. 1723-33-43.....				
AY Angle Fitt. 1950 to 54.....	2.25			
LAY End Fitt. with Cov. 1790 to 94.....	1.40			

"BEND HICKS"

	1/4"	1/2"	3/4"	1"	1 1/4"
Bend Hicks Galvanized.....	\$.50	\$.60	\$.65	\$.75	\$.85
	1 1/4"	2"	2 1/2"	3"	
Bend Hicks Galvanized.....	\$2.15	\$4.10	\$6.00	\$8.25	

"CAP-SWIVEL-LET"

	1/4"	1/2"	3/4"	1"	1 1/4"	2"
"A" Inside Work #1010 to 1064.....	\$0.20	\$0.25	\$0.30	\$0.55	\$0.85	\$1.30
"BW" Threadless Fitt. 4112-4134.....	.45	.50	.75			
"BW" Threadless Fitt. 2112-2124.....	.35	.45				
"FW" Outside Work 1412-1464.....	.40	.50	.65	1.05	1.80	3.00
"LB" Service Entrance 3110-3130.....	.50	.55	.65			
Type "AM" for Nipple 1/4" Long.....	\$0.20	For Nipple 1 1/4" Long.....	\$0.25			
Type "BXA" from 1600 to 1613.....	.20	From 1614-1624.....	.30			
From 1632-1634.....	.35					

"CONDULETS"—Form 6

	1½"	1"	1"	1½"
F Type Ent. Fitt. with Porc. Cov.....	\$.30	\$.35	\$.45	\$.70
LB Type Ent. Fitt. with Metal Cov.....	.35	.40	.45	.90
	1½"	2"	2½"	3"
F Type Ent. Fitt. with Porc. Cov.....	\$1.70	\$2.95	.....	.....
LB Type Ent. Fitt. with Metal Cov.....	1.55	4.10	.....	.....

"ELECTROLETS"

	1/4"	1/2"	1"	1 1/4"
FB Angle Fitt. with Cov. 713-83.....	\$.40	\$.45	\$.50	\$.80
KA End Fitt. with Cov. 1013 to 43.....	.15	.20	.25	.35
SLB Elbow Fitt. with Cov. 1 to 4.....	.40	.45	.50	.90
Y Capped Elbow Y1 to 5.....	.40	.50	.60	1.65

	1 1/4"	2"	2 1/2"	3"
FB Angle Fitt. with Cov. 713-83.....	\$1.90	\$3.00	\$6.60	\$8.50
KA End Fitt. with Cov. 1013 to 43.....				
SLB Elbow Fitt. with Cov. 1 to 4.....				
Y Capped Elbow Y1 to 5.....				

"GENERAL ELECTRIC"

With Covers		1 1/4"	1 1/2"	1"	1 1/4"
Ent. Caps Series	1525 to 1534	.....	.....	.....	.....
Capped Elbow Series	1470 to 1472	.....	.....	.....	.....
Capped Elbow Series	1483 to 1484	.....	.....	.....	.....
Insulets Series	1610 to 1612	.....	.....	.....	.....
Insulets Angle Series	1640 to 1642	.....	.....	.....	.....
Entrance Ells	1490 to 1495	.....	.....	.....	.....
With Covers		1 1/4"	2"	2 1/2"	3"
Ent. Caps Series	1525 to 1532	.....	.....	.....	.....
Capped Elbow Series	1470 to 1472	.....	.....	.....	.....
Capped Elbow Series	1483 to 1484	.....	.....	.....	.....
Insulets Series	1610 to 1612	.....	.....	.....	.....
Insulets Angle Series	1640 to 1642	.....	.....	.....	.....
Entrance Ells	1490 to 1495	.....	.....	.....	.....

GEE-VEE

	3/4"	3/4"	1"	1 1/4"
F Service Cap Series 6000.....	\$.35	\$.40	\$.50	\$.75
B " " " 16000.....	.45	.50	.70	1.75
F Pipe " " " 1000-1310.....	.40	.50	.75	.85
B " " " 2000 & 2100.....	.40	.45	.65	.75
FB Universal " 3000.....	1.00	1.25	1.65	2.75
Weathercap " 40122.....	.30	.30	.....	.....
Service Elbow " 19000.....	.40	.45	.50	.95
Endo Terminal Series 90000.....	.15	.20	.25	1.05
Endo with Male Thread Series 70000.....	.25	.35	.50	.....
Endo for Armored Cable 31143.....	.....	.....	.....	.....
No. 14-2 or No. 12-3 Wire.....	.20	.....	.....	.....
Endo for Armored Cable	.....	.....	.....	.....
Series 30000, Nos. 14 and 12 wire, \$.15; No. 10 wire, \$.30; No. 6 wire, \$.45	.....	.....	.....	.....
SEG Service Elbow Series. 400-3/4"x3/4", \$.70; 1/2"x1/2", \$1.15; 3/4"x3/4", \$1.75	.....	.....	.....	.....
	1 1/4"	2"	2 1/2"	3"
F Service Cap Series 6000.....	\$1.90	\$3.35	\$7.55	\$9.20
B " " " 16000.....	1.90	3.35	7.60	9.25
F Pipe " " " 1000-1310.....	1.20	1.75	3.00	4.15
B " " " 2000 & 2100.....	1.05	.....	.....	.....
FB Universal " 3000.....	3.75	5.40	9.50	12.70
Weathercap " 40122.....	.....	.....	.....	.....
Service Elbow " 19000.....	1.75	3.60	.....	.....
Endo Terminal " 90000.....	1.40	2.40	4.65	7.40

These prices apply only to the United States

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"TAPLETS"

	1/4"	1/2"	3/4"	1"	1 1/4"	2"	2 1/2"	3"
AR End Fitt. with Bushing.....	\$.40	\$.55	\$.70	\$.90	\$1.30	\$1.70	\$2.30	\$3.80
BF Angle Fitt. with Covers.....	.35	.55	.65	1.20				
FA End Fitt. with Covers.....	.15	.20						
FB End Fitt. with Covers.....	.30	.45						
FF Service Fitt. with Covers.....	.35	.40	.50	.80	1.70	2.95	6.25	7.65
FH Service Fitt. with Covers.....	.85	1.05	1.50	1.90	3.05	4.90	11.50	13.65
SE Service Elbow with Covers.....	.95	1.10	1.25	1.90	2.50	4.20	8.45	9.80

"T & B" (Thomas & Betts)

Ent. Cap 1525-32 with Cover.....	\$0.30	\$0.35	\$0.45	\$0.70	\$1.75	\$3.35	\$6.90	\$9.20
Cap. Elbow 1480-84 with ".....	.45	.50	.60	1.70	2.25			
Ent. " 1490-97 " ".....	.40	.45	.55	1.00	1.75	3.00	6.95	8.75
Insulets 1610-11-12 " ".....	.15	.20	.25					
Angle Insulets 1640-1-2 with Cover.....	.30	.45	.60					
Cable " 2000 with Cover.....	.15							
Ent. Caps No. 5525-28 for Thinwall.....	.50	.65	.80	1.25				
Ell No. 5490-95 " ".....	.80	.90	1.30	3.00	4.10	6.70		

"V. V."

	1/4"	1/2"	3/4"	1"	1 1/4"	2"	2 1/2"	3"
Type 2 Term. Fitt. with Cov.....	\$.60	\$.80	\$1.05	\$1.65	\$2.15	\$3.85		
Type 6 Term. Fitt. with Bush.....	.40	.55	.70	.90	1.30	1.70	2.30	5.60
Type 9 Term. Fitt. with Cov.....	.70	1.05	1.40	2.80	4.20	7.00	12.65	15.45
F with Porc. Cover.....	.40	.45	.60	.95	1.60	2.75	6.95	8.55
FB with Porc. Cover.....	.25	.40	.45	.85	1.15	2.35	3.90	5.55
FC Pipe End Porc. Cover.....	.15	.20	.25					
FCBX with Cover.....	.15	.55	.65	1.15	1.35	2.45		
FL with Cast Cover.....	.40	.65	.85	1.75	2.15	4.10		
Y Bend Hick.....	.50	.60	.65	1.75	2.15	4.10		

FITTINGS, "ADAPTI"

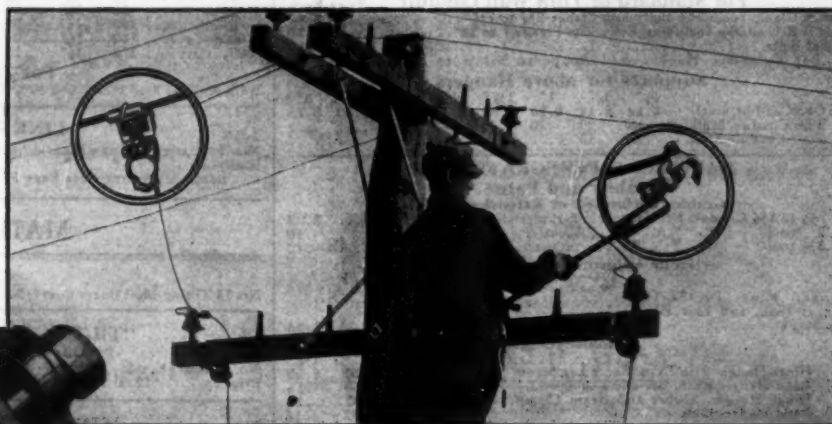
ROUND "ADAPTI" BOXES

Series Numbers	Style	1/4"	1/2"	3/4"	1"	1 1/4"	2"
No. 2900 to 2903.....	1 Back Outlet	\$.40	\$.45	\$.60	\$1.05	\$1.60	\$2.40
No. 3100 to 3105.....	" Side "	.40	.46	.60	1.05	1.60	2.40
No. 3100T & 3101T							
Threadless	" " "	.48	.55				
No. 3170 to 3175.....	" " "	.46	.53	.66	1.15	1.85	2.45
No. 3200 to 3205.....	2 " " "	.48	.55	.73	1.25	2.11	2.70
No. 3200T & 3201T							
Threadless	" " "	.60	.67				
No. 3270 to 3275.....	" " "	.60	.67	.93	1.40	2.25	2.85
No. 32170 to 32175.....	" " "	.63	.60	.85	1.34	2.20	2.80
No. 3300 to 3305.....	3 " " "	.64	.75	.98	1.60	2.65	3.00
No. 3300T to 3305T							
Threadless	" " "	.80	.92				
No. 33170 to 33175.....	" " "	.70	.82	1.05	1.70	2.70	3.05
No. 3400 to 3405.....	4 " " "	.80	1.00	1.20	1.85	2.85	3.20
No. 3500 to 3505.....	" " "	.50	.60	.73	1.40	2.25	3.30
No. 3500 to 3505.....	" " "	.53	.60	.80	1.40	2.25	3.30
No. 3900 to 4105.....	3 " " "	.80	.93	1.05	1.75	2.85	3.95
No. 4900 to 5005.....	4 " " "	.93	1.05	1.32	1.90	3.50	4.65

PARTS For Above Boxes

Series No.	Description	1/4"	1/2"	3/4"	1"
500-501-502	Base Only	\$.27	\$.27	\$.27	\$.27
500X-501X	Extension Ring	.27	.27	.27	.40
501A	Base Concealed to Expd.	.66	.66	.66	.66
0500	" with Tapped Boss	.83	.83	.83	.83
510 to 512	Base	.40	.40	.40	.40
520 to 522	"	.27	.27	.27	.52
30 to 35	Metal Side Plates	.14	.14	.14	.20
40 to 42	Insulated Side Plates	.16	.16	.16	.33
50 to 54	Arm. Flex. Side Plates	.33	.40	.40	.53
60 to 65	Angle Outlet	.16	.22	.42	.42
70 to 75	Elbow Outlet	.22	.29	.50	.50
90 to 93	Connecting Outlet	.28	.22	.33	.33
100 & 101	Straight for No. 500 Base	.16			
110 to 113	" " No. 501 "	.26	.33	.42	
120 to 125	" " No. 502 "	.46	.53	.66	
130 to 135	" " No. 503 "	1.05	1.32	1.60	
140 to 145	" " No. 504 "	2.65	3.05	3.45	
300 & 301	Threadless Outlet	.20	.25		
310 & 311	"	.33	.40		
Series No.	Description	1 1/4"	2"	2 1/2"	3"
500-501-502	Base Only	\$.54	\$1.08	\$1.08	\$1.08
500X-501X	Extension Ring	.40			
501A	Base Concealed to Expd.	.66			
0500	" with Tapped Boss				
510 to 512	Base	.60	1.60	1.60	1.60
520 to 522	"	.62	1.08	1.08	
30 to 35	Metal Side Plates	.20	.38	.38	
40 to 42	Insulated Side Plates	.33	.66	.66	
50 to 54	Arm. Flex. Side Plates	.66			
60 to 65	Angle Outlet	.48	.99	1.05	
70 to 75	Elbow Outlet	.55	1.00	1.12	
90 to 93	Connecting Outlet		.40	.46	
100 & 101	Straight for No. 500 Base				
110 to 113	" " No. 501 "	.48			
120 to 125	" " No. 502 "	.80	.92	1.05	
130 to 135	" " No. 503 "	1.85	2.10	2.40	
140 to 145	" " No. 504 "	3.88	4.25	4.65	
300 & 301	Threadless Outlet				
310 & 311	"				

SAVE TIME in Live-Line Connections



HOW much time do your linemen need to make live-line connections for temporary grounds on transmission lines, for connecting lightning arresters, and for connections during construction work? Is your method expensive and hazardous? General Electric live-line disconnecting clamps are economical and easily adapted; they provide safety for your operator and equipment because of the following features:

1. Large opening for main conductor. Large opening for operating hook. Easily operated at a distance.
2. Rigidly secured to operating hook; cannot fall off and cause damage.
3. Special operating hook unnecessary.
4. Eliminates soldered connections.
5. Strong design and light weight.
6. Corrosion-resisting parts.
7. Suitable for wide range of main- and branch-conductor sizes.
8. Finished for either copper or aluminum conductors.
9. Clamp-pressure contact for main and branch conductors. Branch conductors held by bolted V-shaped serrated contact surfaces.

GENERAL  ELECTRIC
SWITCHGEAR

Why not ask your nearest General Electric office for a copy of GEA-481C, which describes these new live-line disconnecting clamps in detail?

500-75

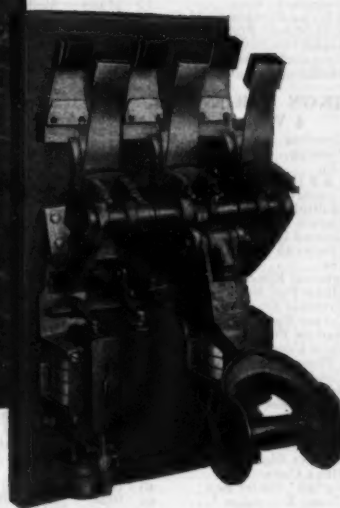
PROTECTORS OF SERVICE



Architects: SIMON & SIMON

Electrical Contractors: RIGGS DISTLER
& Co.

General Contractors: IRWIN & LEIGHTON



*Trip-free, triple-pole air circuit breaker
with two overcurrent inverse-time devices*

CARVING a new contour in Philadelphia's ever rising skyline, the building of the Fidelity Philadelphia Trust Company rises more than 30 stories above the traffic of Broad Street. From its basement $3\frac{1}{2}$ stories below the street level, to its roof, electrical service that will attract and hold tenants must be available for the myriad electric devices that modern business demands. Day and night, G-E air circuit breakers protect the main power and light feeders in this building.

General Electric air circuit breakers are built for all required voltages and ampere capacities either a-c. or

d-c. They are trip-free, solenoid and manually operated, and are made in single-pole and multipole combinations for instantaneous operation, and for time delay on overcurrent.

Operating within 20-degree temperature-rise requirements, these breakers protect circuits against overcurrent, reverse current, and undervoltage as conditions may require.

JOIN THE "G-E CIRCLE"—SUNDAYS AT 5:30 P.M. E.S.T. ON N.B.C. NETWORK OF 54 STATIONS—WEEK-DAYS (EXCEPT SATURDAY) AT NOON 490-12

GENERAL ELECTRIC

SALES AND ENGINEERING SERVICE IN PRINCIPAL CITIES

PL-16

Molding

OVALDUCT FITTINGS		
No.	Description	Price Each
24-CQ	Extension box cover for 4" outlet boxes	\$.45
401	Box Connector with 1/2" Bondnut	.25
2133	Squeeze Type Coupling 1 1/4" long	.15
2134	90 Degree Internal Elbow	.35
2135	45 " Flat	.25
2136	One piece 90 degree elbow	.50
2156	90 " Box Connector	.30
2159	Wire Toggle Fastener	.03
2161	Strap Fastener	.02
2181	Connector Ovalduct to Oval Knockout	.10
2662	Outlet Box 4 x 3 1/2"	.30
2663	Extension Ring for Boxes	.30
2665	Outlet Box 4 x 3 1/2" with Fixture Stud	.25
2862	" " 3 1/4 x 3 1/4	.20
2865	" " 3 1/4 x 3 1/4 with Fixture Stud	.25
4170-S1	Sectional Switch Box 4 x 1 1/2 x 1	.35
4173-S1	Spacer for above box	.30

MOLDING, WIREMOLD

MOLDING		
No.	500 2-Wire, price per ft.	700 4-Wire, price per ft.
"	700 4-Wire, " " "	.12
"	1000 Master Size, " " "	.25

FITTINGS FOR No. 500		
Number	Description	Price
502	Bushing	\$0.04
504	Supporting Strap	.03
506	Connecting Cover	.03
511-12	45 & 90 Deg. Elbows	.23
515	Tee 1/2" In.	.26
516	Cross Plain	.36
517	Internal Elbow	.20
518	External "	.20
519	Corner Box	.45
521	1 Piece Rosette	.33
523	3/4" Fixture Rosette	.75
524	3/4" " "	.60
525	Receptacle Base	.75
526	Keyless Receptacle	.85
527	Attachment Plug	.90
532-23	2 1/4 & 3" Outlet Box	.45
558	Openwork Coupling	.35
599	Moulding Connector	.05

FITTINGS FOR No. 700		
Number	Description	Price
701	Coupling	\$0.03
702	Bushing	.04
703	Clip	.04
704	1 & 2 Hole Strap	.04
706	Connection Cover	.03
707	Multiple Strap	.05
708	Fixture Hook	.20
709	Ground Clamp	.11
711-12	Elbows 45 & 90 Deg.	.20
715	Tee	.30
717	Internal Elbow	.24
717A	Elbow Pull Box	.50
718	External Elbow	.22
719	Corner Box	.50
720	Narrow Fitting	.50
720A	Show Case Outlet	.55
721	1 Piece Rosette	.33
724	Comb.	.65
725	Receptacle Base	.75
726	Keyless Receptacle	.85
727	Plug Receptacle	.95
728	Utility Box	.45
729	" " Cond. Type	.45
730	Contact Block	.20
731	Blank Cover	.12
732-3	2 1/4 & 3" Outlet Box	.40
734	Closed Extension	.65
735	Distribution Box	.70
736	Blank Cover	.15
737	4 1/4" Extension Box	.60
738	4 1/4" Fixture Box	.55
738D	Duple Thru Hook Conn.	1.45
738E	Stamped Hook	.60
739	Canopy	.90
739A	6 1/2" Extension	.95

LEWIS METER AND SWITCH CABINETS		
CLASS A	MAIN FUSE ACCESSIBLE	Price
30 125-250 3 2	Solid.....M7311-ML7311	\$14.30
30 125-250 3 2	".....M7311M-ML7311M	13.80
30 125 2 2	".....M7211-ML7211	13.90
30 125 2 2	".....M7211M-ML7211M	13.80
60 125-250 3 2	Fused.....M7312-ML7312	19.75
60 125-250 3 2	Solid.....M7312M-ML7312M	19.05
60 125 2 2	".....M7212-ML7212	19.30
60 125 2 2	".....M7212M-ML7212M	19.05
60 125 2 2	Fused.....M7212D-ML7212D	19.30
SEALED MAIN FUSES		
30 125 2 2	Solid.....M5211 or ML5211	\$12.30
30 125-250 3 2	".....M5311 " ML5311	12.80
30 125 2 2	Fused.....M 311 " ML 311	12.30
30 125-250 3 2	Unfused.....M 311 " ML 311	12.30
30 250 2 2	Fused.....M 221 " ML 221	12.95
60 350 2 2	".....M 222 " ML 222	15.30
30 125-250 3 2	Unfused.....M 321 " ML 321	12.70
30 125-250 3 2	Solid.....M 321SN or ML 321SN	12.70
60 125-250 3 2	".....M 322 or ML 322	15.30

"METER TEST TYPE" CABINETS		
50 Amps.....	Cat. No. M303 or ML303	\$6.25
60 Amps.....	Cat. No. M602 or ML602	7.80

These prices apply only to the United States

Plugs, Appliance

N-SUNDRIES

PIPE NIPPLES		
Size Conduit	Close Nipples—Galv.	2 1/2" 3"
1/2" 3/4" 1" 1 1/4" 1 1/2" 2"	Cond. Cond. Cond. Cond. Cond. Cond.	Cond. Cond.
	\$0.07 \$0.08 \$0.12 \$0.16 \$0.20 \$0.24	
Standard Short Nipples—Black or Galv.		
Length Conduit		
2" to 3 1/4" Long	\$0.10	
3 1/4" 4" 4 1/4" 5" 5 1/4" 6" 6 1/4" 7" 7 1/4" 8" 8 1/4" 9" 9 1/4" 10" 11" 12"	\$0.12 \$0.15 \$0.21 \$0.21 \$0.35 \$0.70 \$0.85	
Long Nipples—Black or Galv.		
4" Long	\$0.10	
5" 6" 7" 8" 9" 10" 11" 12"	\$0.14 \$0.20 \$0.24 \$0.30 \$0.38 \$0.80 \$1.00 \$1.25 \$1.40 \$1.55 \$1.80 \$1.95	

CHASE NIPPLES & COUPLINGS		
Size	1/2" 3/4" 1" 1 1/4" 1 1/2" 2" 2 1/2" 3"	
Chase Nipples, each	\$.10 \$.10 \$.10 \$.14 \$.25 \$.28 \$.50 \$.70 \$ 1.10	
Couplings	.12 .12 .12 .14	

CHASE MALE REDUCERS AND FEMALE ENLARGERS			
Malleable Iron Galvanized			
1/4" to 1/2" Reducer, each	..... \$ .20	1/4" to 3/4" Enlargers, each	..... \$ .20
1/4" to 1/2" " " " "	..... .25	1/4" to 1 1/4" " " " "	..... .25
1/4" to 1/2" " " " "	..... .45	1/4" to 1 1/2" " " " "	..... .35
		1/4" to 1 3/4" " " " "	..... .50

NAILS—Insulated			
Millonite Insulated Nails, per dozen.....	\$.05	Per Box	\$.40
Leather Nail Heads, " " .....	.05	of	.40
Staples Insulated, " " .....	.05	100	.40

PLUGS, ATTACHMENT

ATTACHMENT PLUGS COMPLETE		
		Price
"Pony" Composition		\$0.15
Standard		.20
"Pony" Genuine "Bakelite"		.15
Polarized Standard Comp. Plug		.25
Large Size Double T Slot Comp.		.60
"Standard" Porcelain		.50
Weatherproof One Piece Comp.		.45
Benjamin #903 Swivel Plug		.20
Pony Body Only \$0.10	Standard Body, \$0.15	Large Body, \$0.35

10 AMP.—CAPS ONLY—For Attachment Plugs		
"Pony" Cap Composition		\$0.10
"Standard" Cap		.10
"Pony" Genuine "Bakelite"		.10
Large Size Cap Composition		.25
Plug With Extension Knob		.10
Soft Rubber Cap		.25
"Standard" Cord Grip Cap		.30
"Standard" Steel Covered Cap		.20
" " Brass " Cord Grip		.45
Disappearing Door Comp. Cap		.20
" " Brass Cov. Cap		1.15
"Standard" Brass Cov. Finger Grip		.70
" " "Knostrein" Comp. Cap		.40
" " Brass Cov. Knostrein		.65
" " Comp. Fusible Cap		.60
Polarized 2 Wire Comp.		.20
" " 2 " Brass Cov. Cap		.40
" " 2 " Steel " "		.25
" " 2 " Cord Grip " "		.35

20 AMP. CAPS—For Polarized Devices		
2 Wire Brass Covered Cap		\$0.90
3 " " "		1.20
2 " Steel Covered Cord Grip Cap		1.00
3 " " "		1.30

30, 40 & 60 AMP. CAPS—For Polarized Devices		
30 Amp. 2 Wire Porcelain Cap		\$1.55
30 " 2 " Steel Cov. Cord Grip		1.90
30 " 3 " Porcelain " "		1.55
30 " 3 " Steel Cov. " "		1.75
40 " 3 " Str. Cap Ground. C. G.		2.25
60 " 3 " Steel Cov. Cord Grip		2.10

Flasher Plugs			
Diamond Flasher Button....	\$0.60	No. 125 Speeddoodle Plugs....	\$2.50
"Propp" #580 Flasher Button	.50	No. 164 " " " " " "	.60
"Rodale" 110 Volt " Plug	.50	No. 161 " " " " " "	.80
220 Volt " "	.65	No. 165 " " " " " "	.90

PLUGS, APPLIANCE

Make	No.	Description	Price
American Beauty	802	Plug Complete for Small Irons	\$0.40
	806	" " Large	1.25
	807	" " Toasters & Stoves	.30
Arrow & Hegeman	7762	Standard Size with Switch	.40
	7760	" " without " "	.20
Beaver	7761	Pony	.30
	F-1	"Gripall" Super-Type Adjustable Cont.	.45
	F-5	" " Armored Casing	.55
	F-7	Adj. Cont. Bakelite	.80
	F-22	"Suitzall" Heater Plug—Full Size	.20

PLUGS, APPLIANCE, Continued	
Beaver "Gripall" & "Suitzall"	F-31 Standard Heater Plug—Single Sided Cont. \$0.15
	F-32 Heater Plug Double Sided Contacts.... .20
	F-33 Armored Casing (F-32 Type Armored).... .25
	F-34 Medium Heater Plug—Bakelite.... .25
	F-30 Small Heater Plug—Black.... .20
	G-1 "Gripall" Heater Switch Plug Adj. Cont. .80
	G-2 "Gripall" Heater Switch Plug Nickel Alloy Contacts.... .90
	G-21 Competitive Push Button Type.... .45
	G-22 New Toggle Type.... .45
Belden	1708 Aircool Heater Plug.... 1.00
Bryant	668 Universal Appliance Plug with Switch.... .90
	669 Switchless.... .50
	752 Appliance Plug with Indicating Switch.... .60
	2906 Small Switchless Plug.... .45
Cutler-Hammer	7051 Appliance Plug with Switch.... .60
G. E.	2602 Armored Heater Plug No Switch.... .25
	2633 Large Heater Plug "with".... .45
	2642 Switch "with".... .45
	2690 Small "No".... .25
	2826 "Handy Pull" Heater Plug.... .30
Hemco	H250 Switchless Appliance Plug Bakelite.... .50
	H260 Switch.... .90
Hotpoint	CD6P1 Iron Plug No Switch.... .45
	CD69P1 "with" Armored.... .60
	CD79P1 "with".... 1.00
Kool-Pull (Noark)	8037 Appliance Plug—No Switch.... .75
	8039 "with".... 1.00
Propp	8 One 4-All Appliance Plug—No Switch.... .30
	52 Iron Plug with Switch.... .50
	55 Standard Iron Plug—No Switch.... .20
	56 Armored "No Switch".... .30
Reynolite	500 Heater Plug No Switch.... .40
	510 "with" Switch.... .75
Rodale	P-21 Heater Plug No Switch Cold Molded.... .15
	P-29 "Armored".... .20
	450 F tall Heater Plug—No Switch.... .45
	610 Bakelite "Small".... .20
	615 "Armored Heater Plug—No Switch".... .30
	830 Iron Plug with Switch.... .45
	800 "Armored".... .65
Simplex	890 Armored Plug—No Switch.... .75
	900 Deluxe Chromplate Plug.... 1.00
Sunbeam	A-85 Heater Plug.... 1.50
Torrid	B-0808 Automatic Heat Control Plug For AC Only 1.00
	B-080 Safety.... 1.00
Waage	3 & 4 Heat Plug Only.... .60
Westinghouse	209423 Appliance Plug—No Switch.... .75
	373656 "With".... 1.00

PANEL BOARDS OR FUSE CABINETS

FRANK ADAM	
All 30 Amp.—S. P.—NEC Fuses	Branch 4 6 8 12
"FBX" Safety Type Fuse Boxes	\$ 3.80 \$ 5.60
"NR" Main Cable Lug Only	\$ 8.90 \$11.00
"NR" Solid Neutral	11.15 13.40 15.60 18.80
NR3G Main Cable Lug Only	16.50 19.80
BENJAMIN-STARRETT	
All for Plug Fuses	Circuit 4 6 8 10 12
66104-12 NP —One Fuse 3 Wire	\$ 5.20 \$ 7.40 \$ 8.90 \$10.40 \$11.90
66204-12 P —Two Fuse 2 and 3 Wire Serv.	7.50 11.15 13.35 15.60 18.60
66304-12 NEP —One Fuse with Switch Pl.	7.10 10.30 12.80 16.50 19.15
66404-12 EP —Two Fuse with Switch Pl.	10.30 15.25 19.15 21.80 25.15
BULLDOG FUSEMETERS	
No. Description	Circuit 2 4 6 8 10 12
CBS Surface Black Finish with shield	\$1.80 \$2.30 \$3.90 \$7.00 \$9.75 \$10.30
BOS "Black Finish with-out Shield	1.65 2.15 3.70 5.35 8.75 10.30 11.75
BF Flush Laminized Finish	2.50 3.70 5.35 8.75 10.30 11.75
BBF "Black Finish	2.00 2.75 4.70
BSF "Lum. Finish with Toggle Switches	6.60 9.00 13.20 15.70 19.80
BSSF "Lum. Finish with 30 A. Saftofuse	20.50 22.00 31.75 33.35 35.00
BSSF "Lum. Finish with 60 A. Saftofuse	21.50 22.30 32.25 33.75 35.40
BKF "Lum. Finish with Pull Box	6.60 9.00 14.85 17.35 19.80
FUSE CABS—All-Steel-Equip. Co.	
Style and No.	Description Circuit 2 4 6 8 12
C702-4-6	Surf. Small Type Black.... \$1.50 \$2.25 \$3.55
C902-4-6	Flush.... 1.50 2.25 3.55
D3008 & 12	Surf. Sgl or Two Fuse.... \$5.95 \$8.75
D3038 & 42	Flush.... 5.95 8.75
DS4304-6-8-12 Surf.	4.05 7.00 9.10 14.45
DS3304-6-8-12 Flush	4.05 7.00 9.10 14.45
KILLARK	
Standard Flush Type Panels	Circuit 2 4 6 8 10 12
Series KRP—2 to 12 Inclusive..	\$2.00 \$2.90 \$4.75 \$6.50 \$8.50 \$10.75
CUTLER-HAMMER—Fuse Panels—Flush Mounting	
All 30 Amp.	
Circuits	2 Cir. 4 Cir. 6 Cir.
Black Finish Series 4355 H25-30..	\$ 1.80 \$ 2.50 \$ 4.45
Aluminum Finish Series 4355 H25-30..	2.30 3.30 5.10
Circuits	8 Cir. 10 Cir. 12 Cir.
Black Finish Series 4355 H25-30..	\$ 7.85 \$ 9.60 \$11.15
Aluminum Finish Series 4355 H25-30..	8.25 9.90 11.15

These prices apply only to the United States

Electrical Contracting, January, 1932

G. E. or TRUMBULL—Residence Panel Boards	
Surface or Flush Mounting	Circuit 4 6 8 10 12
Single No 3104 to 3212	Circuit
Flush Mtg. or Fusing	
2005 to 2912	\$2.80 \$ 4.55 \$ 9.65 \$11.25 \$13.00
Double No. 3404 to 3412	
Flush Mtg. or Fusing	
2704 to 2712	9.10 12.40 18.15 23.10 26.40

SQUARE D—Fuse Cabinets	
Series 37000 to 39000	Circuit 2 4 6 8 10 12
Flush Series 37000 Black	\$1.85 \$2.50 \$4.50 \$7.90 \$9.50 \$11.15
37000 Aluminum	2.35 3.35 5.10 8.30 10.00 11.15
Surface Series 39000 Black	1.85 2.50 4.50 7.90 9.50 11.15
NOTE: 2 & 4 Circuit Flush Type arranged for mounting direct to front side of studding with channels for lathe ends, each....	
.50.20	

Combination Fuse Cabinets	
60 Amp. Fuse Break and 30 Amp. Circuits	Only Circuit 2 4 6 8
Flush Mounting Aluminum	\$7.45 \$12.40 \$14.00 \$14.85 \$23.00
Surface Black	6.45 10.75 11.55 12.40 20.65

WADSWORTH Fuse Cabinets & Panelboards	
All Dead Front Single Fusing	Circuit 2 4 6 8 10 12
Surface Mtg.	\$2.30 \$3.00 \$4.85 \$5.75 \$7.55 \$11.55
Flush Mtg. Hanger Support	2.85 3.80 6.10 7.55 10.20 12.00
Flush Type for Tyle Sw.	6.85 11.10 13.75 16.40 19.85
Surface Mtg. Enc. Panel Boards 100 Amp.	16 Circuit 20 Circuit 24 Circuit
Flush	\$22.00 \$25.35 \$32.00
	24.75 28.00 34.65

WESTINGHOUSE Junior Residence Type	
Junior Residence Panels	Circuit 2 3 4 6 8 10 12
No. K-64012-21 & 64052-61	\$2.50 \$2.70 \$3.75 \$5.35 \$8.75 \$10.30 \$11.70
Junior Building Panels for Toggle Switches	
No. K-64034-43 & 64074-81	6.60 9.00 13.20 15.70 19.80
Pothole Compound Per Pound	.55

PLATES & PLUGS, RECEPTACLE

PLATES—For Flush Receptacles	
	.040 Gauge .060 Gauge
All Types	Bakelite Lacquer B. Brass Lacquer B. Brass
Single or Duplex Plate	\$0.15 \$0.15 \$0.15 \$0.20 \$0.25
Lift Cover Plate 1 Outlet	.40 .55 .55 .65
Radio Plates Jack Type—Sgle. or Duplex	.20 .15 .20 .20 .30
Telephone One Outlet	.20 .35 .45 .45 .50
Double	.20 .45 .55 .65 .75
Disappearing Door Plate Sgle. or Duplex	.75 1.15
Chapman Receptacle	.75
Blank Plates One Gang	.20 .25 .30 .30 .40
Bull's Eye Plate One Gang	.80 .70 .80 .80 .85
"and 1 Switch Comb.	.90 1.00
"and 1 Recept.	1.00
Switch and Sgle. or Duplex Recept.	.50 .55 .70 .70 .80
Steel Plates for 30 and 40 Amp. Polarized Receptacles	.80
Solid Brass Plates 30, 40 & 60 Amp.	1.65
Screwless Plates Bakelite for Hubbell Receptacles	.55
Porcelain Enameled Plates for Sgle. or Duplex Receptacles	.25
Mirror Glass Plates for Single Receptacle	1.00
DeLuxe Metal Plates for Single or Duplex Receptacles	.90
DeLuxe Wood Inlaid Plates for Single or Duplex Receptacles	2.35

CAPS & PLUGS For Receptacles	
10 Amp. Pony Bakelite Cap.	Price \$0.10
10 "Standard	.10
10 "Cap With Extension Knob	.10
10 "Brass Covered Cap	.45
10 "Steel	.30
10 "Cord Grip Cap	.30
10 "Tandem Blade Compo. Cap.	.25
Radio Jack Plug	.45
Radio Plug For #2144 Receptacle	.25
Chapman Plug Compos.	.75
Chapman Plug Porcelain	.45
Disappearing Door Plug Brass Top	1.20
10 Amp. 2 Wire Polariz. Comp. Cap.	.25
10 "2 "Cord Grip Cap	.35
20 "2 "Comp.	.55
20 "2 "Cord Grip	.85
30 "2 "Comp.	.90
30 "2 "Cord Grip	1.65
10 "3 "Comp.	.45
20 "3 "Cord Grip	.70
30 "3 "Comp.	.70
30 "3 "Cord Grip	1.10
30 "3 "Comp.	.65
30 "3 "Comp. Cord Grip	1.75
40 "3 "Heavy Duty Angle Cap.	2.40
60 "3 "With Cord Grip	2.10
110 Volt 2 CP S8 Carbon Lamp for Bull's Eye Receptacle	.65
110 Volt 2 CP S7	.40

RECEPTACLES, FLUSH

STANDARD RECEPTACLES OR CONVENIENCE OUTLETS	
Without Plates	Plates Extra
Shallow Bakelite Side	Single \$.20
"Porc.	Duplex .30
"" " " " " " "	Single .30
"" " " " " " "	Duplex .40
Deep Bakelite Top	Single .40
"Porc.	Duplex .50
"" " " " " " "	Single .35
"" " " " " " "	Duplex .45
Shallow Bakelite Side	Single .15
"" " " " " " "	Duplex .20

Plates Extra Except Where Marked "X"

YAXLEY RADIO RECEPTACLES
Or Convenience Outlets

RECEPTACLE COMBINATIONS—With Plates

RECEPTACLES, PORCELAIN

ALABAX RECEPTACLES AND FIXTURES

Column No. 1—Number of Alabax Fixture.
Column No. 2—Rental Price Standard White Glass Finish.

Column No. 3—Resale Price All Over Color B-D-E-F-G-H

The above Prices do not include Glassware or Lamps.

STANDARD RECEPTACLES or Lampholders

Keyless Porcelain Uni-
Standard versal

Standard Bce

Keyless Mounted Bk. Metal Cov. 3 1/4" Box.....	.30
--	-----

Receptacle.....

10	"	Duplex	"	"	"	31	"	50
10	"	Seal	"	"	"	49	"	50

2 Wire.....

10 A. Small Crest	2	00	.....	2.00
10 A. For Wood Molding	2	00	.....	2.00

Pull for Ceiling Ring 7" Chain.....	\$0.35
-------------------------------------	--------

" " "	" " & Cord.....	.40
" " "	" " 3 ft. Chain.....	.60

Keyless Removable Ring

Stand. Shallow	Screw Term.	.....	\$0.30
Covered		.....	31

STANDARD ROSETTES—Porcelain

"	2	"	"	Fusible	"	.....	2
"	2	"	"		"	.....	3

Copper-	Galva-	Galva-	
clad	neal	neal	

well	nized	nized	well	nized	nized
	Not	Wired		Not	Wired

Electrical Contracting, January, 1932

RAWLPLUGS—Standard Types					
Number of Rawlplug	Drill Hole	For Screw No.	Price Each	Number of Rawlplug	Drill Hole
		Any Length			
6.....	1/8"	6-7	\$.02	14.....	1/4"
8.....	1/8"	8-9	.03	16.....	1/4"
10.....	1/8"	10-11	.04	20.....	1/2"
12.....	1/4"	12	.05		

Rawlplugs for Lag Screws

Size of Lag Screw	Size Drill Hole	Size of Rawlplug	Price Each			
			1 1/4"	2"	3"	3 1/2"
1 1/4"	1 1/8"	1 1/4"	\$.13	\$.15	\$.18	\$.20
1 1/2"	1 1/8"	1 1/2"	.14	.17	.20	.23
1 3/4"	1 1/8"	1 3/4"	..	.20	.23	.26
2"	1 1/8"	2"	..	..	.27	.30

HEAVY DUTY WEATHERPROOF SOCKETS

Copper or Aluminum Shell		Price
All Keyless		
1 Piece with 1/4 or 3/8 Nipple		\$0.65
1 " " " Cord Grip		.65
2 " " " 1/4 Nipple		.80
2 " " " 3/8 Nipple		.80
2 " " " Cord Grip		.80
Shadeholders for above sockets		
2 1/4 Aluminum or Copper Extra		\$0.35
3 1/4 " " " " " "		.80
4 " " " " " "		.65

HEAVY DUTY SOCKETS—Benjamin

Price Each	
Benox Keyless Socket with Clamp Ring Medium Base	\$1.25
" " " " " " " "	1.05
" " " " " " " "	2.00
Benox Keyless Socket Copper or Alum.	.75
" " " " " " " "	.90
" " " " " " " "	1.60
" " " " " " " "	2.00
Benox Threaded Holders Only	2 1/4 .35 3 1/4 .40 4 .45
Polish. Alum. Weatherpri—	.40 .60 \$1.00
Copper	.40 .60 1.00
Brushed Brass	.40 .60 1.00

BENJAMIN MOGUL SOCKETS

With 1/4 or 3/8 1/2 or 3/4		Price
One Piece Socket with Lamp Grip	Without Yoke	\$1.00 \$1.15 \$1.50
Two Piece Socket with Lamp Grip	With Yoke	1.20 1.45 1.70

BENJAMIN REFLECTOR SOCKETS

Porcelain or Similar		Price
With Type X or XR Fitting		
Medium Base Keyless Tapped 1/4-1/2-3/4		\$1.20
" " " " " " " "		1.60
" " " " " " " "		1.45
" " " " " " " "		1.90
" " " " " " " "		2.05
Mogul Base Keyless Shock Absorbing		1.95
" " " " " " " "		1.65
If X or XR Fitting not supplied on above sockets deduct		.45

SWITCHES, FLUSH TUMBLER

All Square Handle		Price
Plates and Boxes Extra		
Porc. Cup—S. P.		\$0.30
" " " " " " " "		1.15
" " " " " " " "		.45
" " " " " " " "		3.25
Compo—S. P.		.90
" " " " " " " "		1.50
" " " " " " " "		1.15
" " " " " " " "		3.80
COMPE- TIVE		
Porc. Cup—S. P.		.40
" " " " " " " "		1.35
" " " " " " " "		1.65
" " " " " " " "		1.75
" " " " " " " "		2.35
" " " " " " " "		2.35
HEAVY DUTY		
Porc. Cup—S. P.		1.60
" " " " " " " "		2.30
" " " " " " " "		1.65
" " " " " " " "		4.90
LOCK TYPE		
Twin 2 S. P. Switches		1.40
" " " " " " " "		1.55
NEW CIRCUIT TYPE		
" " " " " " " "		1.75
" " " " " " " "		2.10
" " " " " " " "		2.25
EXTRAS—For Luminous Tip add for Each Handle		.40
For Glo Guide Handle Switches add for Each		1.00

TUMBLER SWITCH COMBINATIONS

Description		Price
6 A. S. P. Switch—Pilot Lt.—Textolite Plate		\$2.55
10 A. D. P. Switch—Pilot Lt.—060 Plate		3.30
" " " " " " " "		1.90
20 " " " " " " " "		2.20
Switch—Tap & Receptacle with " "		1.65

PLATES For Tumbler Switches

Price	
Stamped Brass Sprayed Finish .040 Thick	1 Gang \$.10 2 Gang \$.20 3 Gang \$.30 4 Gang \$1.10
" " " " " " " "	.15 .30 .45 1.35
" " " " " " " "	.20 .40 .60 1.35
" " " " " " " "	.25 .50 .75 1.60
Bakelite Plate for Receptacle or Switch	.15 .30 .45 .80
" " " " " " " "	.25 .50 .75
Twin & Triple B. B. or Bakelite Plates	.25 .25 .25
Comb. Switch and Recept.—Moulded Comp.	.30 .40 .40
Pilot Light	.75 .75 .75
Hubbell Bakelite Screwless Plates	.60 1.10 1.60 2.25
Bryant DeLuxe Wood Inlaid any Finish	2.75 4.70 7.70
" " " " " " " "	1.00 1.75 2.45
Guth Porcelain Enamel Plates	.25 .60 1.00
Glass Mirror Plates	1.00 1.75 2.50 3.25
Blank Plate .040 Brush Brass Finish	.80 .60 .90

SWITCHES, FLUSH PUSH

Plate & Boxes Extra		Price
Standard Shallow Type Porcelain Cup—Single Pole		\$0.40
" " " " " " " "		1.50
" " " " " " " "		.70
" " " " " " " "		3.85
Deep Type Porcelain Cup—Single Pole		.75
" " " " " " " "		1.50
" " " " " " " "		1.45
" " " " " " " "		3.85

Plate and Boxes Extra—Continued

Price	
Special High Grade Composition Cup—Single Pole	\$1.50
" " " " " " " "	1.85
" " " " " " " "	1.85
" " " " " " " "	4.20
Lock Type Standard Porcelain Cup—Single Pole	1.80
" " " " " " " "	2.35
" " " " " " " "	2.35
" " " " " " " "	5.00
Electrolite Non-Indicating	2.00
Indicating	2.35
Extra for Luminous Button Add Per Switch	.40

PUSH SWITCH COMBINATIONS

With Plates		Price
Bryant 117 D. P. Indicating Switch Flush Receptacle & .060 Plate		\$2.50
413 One Push Switch—Bulls Eye and Solid Plate		4.80
518 " " " " " " " "		5.55
465 " " " " " " " "		3.90
467 " " " " " " " "		6.15
558 " " " " " " " "		7.00

PLATES For Flush Push Switches

Description		1 Gang	2 Gang	3 Gang	4 Gang
Stamped Brass Sprayed Finish .040 Thick		\$.15	\$.30	\$.45	\$1.10
" " " " " " " "		.20	.40	.60	1.35
" " " " " " " "		.25	.50	.75	1.35
" " " " " " " "		.30	.60	.90	1.60
Bakelite or Composition		.15	.30	.45	.80
Bryant DeLuxe Plates Wood Inlaid		2.75	4.70	7.70	...
" " " " " " " "		1.00	1.75	2.45	...
Guth Porcelain Plates		.25	.60	1.00	...
Glass Mirror Plates		1.00	1.75	2.50	\$3.25
Blank Plate .040 Brush Brass Finish		.30	.60	.90	...
Combination Switch & Receptacle Moulded		.30	.40	...	...
" " " " " " " "		.50	.65	...	...
" " " " " " " "		1.75	...	...	...

SWITCHES, SURFACE SNAP

METAL COVERED SNAP SWITCHES

Poles	Volts	Type	Size	Amp.	5	10	20	30
Single	125	Non-Indicating	Pony	\$.40				
"	"	Indicating	"	.45				
"	"	Non-Indicating	Standard	.65	\$.80	\$1.75	\$2.90	
"	"	Indicating	"	.65	.90	1.95	3.20	
Double	250	Non-Indicating	"	.90	1.10	2.45	2.95	
"	"	Indicating	"	1.05	1.25	2.55	3.80	
Triple	"	Non-Indicating	"	1.00	3.10	5.10	6.00	
"	"	Indicating	"	1.00	3.90	5.30	6.35	
3-Way	125	Non-Indicating	"	.90	1.70	3.20	3.90	
4-Way	"	Non-Indicating	"	1.85	4.00	...	...
Electrolite	"	Non-Indicating	"	2.10	...	...	...
"	"	Indicating	"	2.30	...	...	...

ALL PORCELAIN SNAP SWITCHES

Poles	Volts	Type	Size	Amp.	5	10	20	30
Single	125	Non-Indicating	Pony	\$.50				
"	125	Indicating	"	.60				
"	125	Non-Indicating	Standard	.70	\$.90	\$3.00		
"	125	Indicating	"	.75	1.00	\$2.45	3.40	
Double	250	Non-Indicating	"	1.00	1.20	3.30	3.90	
"	250	Indicating	"	1.10	1.40	3.25	3.75	
3-Way	125	Non-Indicating	"	1.00	1.70	3.25	3.75	
4-Way	125	Non-Indicating	"	1.80	3.80	...	...
Electrolite	125	Indicating	"	2.30	...	...	...

TUMBLER OR TOGGLE SURFACE SWITCHES

Metal or Composition Covers		Single Pole	Double Pole	3 Way	4 Way
125-250 Volt					
5 Amp. Closed or Slott. Base		\$.40	\$.65	\$.90	\$1.50
5 Amp. with Outlet Box Cover 3 1/2 or 4"		.60	1.00	1.00	...
10 Amp. Closed or Slott. Base		.90	1.25	1.35	...

SNAP SWITCHES FOR WOOD MOLD, CONDULETS, ETC.

Metal Covered		Non-Indicating	Indicating	Indicating	Indicating
Single Pole	5 Amp. 125 Volts	.65	.60	.75	.75
Double	" " " "	1.20	1.10	1.25	1.15
Three Way	" " " "	1.00	1.00	1.20	...
Electrolite	" " " "	1.50	1.60	...	...

PARTS FOR SNAP SWITCHES

Price	
Handles—Standard Type Each	\$.12—Ratchet Type
Bases—Porcelain 5 Amp. \$.12—10 Amp. \$.15—20 Amp.	.30
Covers—10 Amp. & Under Metal \$.15—Porcelain	.20
Over 10 Amp.	.30

SWITCHES, PULL CORD, CHAIN, CANOPY, LEVOLIER, ETC.

PULL SWITCHES—BODIES ONLY

Small Socket Type		Price
Ceiling—Bottom Pull		\$0.95
Wall—Side Pull		1.00
Rosette—Side Pull		.95
Fixture—Bottom Pull		1.25
1 1/2" Brass Cap		.10
1 1/2" Brass Cap		.35
1 1/2" Brass Cap		.15
Small Cleat Base		.40
Small Slotted or Concealed Base		.30
Large Concealed Base		.40
Wood Moulding Base		.35
Small Box Base Brass Covered		.50
3 1/4" Box Base Brass Covered		.65
4" Box Base Brass Covered		1.25
3 1/4" Box Cover with Ring		.90
4" Box Cover with Ring		.95

These prices apply only to the United States

Electrical Contracting, January, 1932

"Square D" Main Fuses Sealed Without End Walls

Amps. Poles		Meter				Non-Meter	
		Fused For	Neutral	Test Type	Price	Number	Price
30	2	2 Plug	Fused	36211	\$ 3.50	16211	\$ 3.10
30	2	1 "	Solid	36231	3.50	16231	3.10
30	3	2 "	"	36331	3.70	16331	3.25
30	2	2 Enc.	Fused	36251	4.10	16251	3.70
30	2	1 "	Solid	36271	3.80	16271	3.40
30	3	2 "	Solid	36371	4.30	16371	3.85
60	2	2 "	Fused	36252	12.90	16252	11.95
60	3	1 "	Solid	36272	12.00	16272	11.10
60	3	2 "	Solid	36372	13.75	16372	12.85
100	2	2 "	Fused	36253	21.25	16253	20.35
100	2	1 "	Solid	36273	21.25	16273	19.45
100	3	2 "	Solid	36373	23.00	16373	21.25

"Square D" Meter Service Types

Single Type		Ganging Type	
No. 32211 or 33211.....	\$3.70	No. 12211-13211....	\$4.18
No. 32311.....	4.00	No. 12311.....	4.46
No. 34211.....	4.60	No. 14311.....	5.68
No. 34311.....	5.25		

"Square D" Without End Walls Live & Dead Fuse Type

METER TESTING						
Number	Amps.	Pole	Fused	Neutral	Description	Price
55211	30	2	1 Plug	Solid	Single Type Fuse Dead.....	\$ 2.35
58211	30	2	2 "	Fused	" " " " Live.....	2.95
SK-916	30	2	1 "	Solid	" " " " ".....	2.95
55311	30	3	2 "	Solid	" " " " " Dead.....	3.70
57311	30	3	2 "	"	" " " " " Live.....	3.70
15211	30	2	"	"	" " " " " " Gang Type Fuse.....	2.60
82111	30	2	"	Fused	" " " " " " Live.....	3.35
39231	30	2	1 "	Solid	Gang Type Acces. M. Fuses.....	4.40
39331	30	3	2 "	"	Gang Type Acces. M. Fuses.....	5.20
15311	30	3	2 "	Solid	" " " " " " Fuse Dead.....	4.15
17311	30	3	2 "	"	" " " " " " Live.....	4.15
58251	30	2	2 Cart.	Fused	Cartridge " " Live.....	3.30
26251	30	2	2 "	"	" " " " " " Dead.....	4.05
57561	30	3	2 "	Solid	" " " " " " Live.....	4.05
28253	60	2	2 "	Fused	" " " " " " ".....	8.45
27312	60	3	2 "	Solid	" " " " " " ".....	8.90
14312	60	3	2 "	"	" " " " " " " Dead.....	19.80
28253	100	2	2 "	Fused	" " " " " " " Live.....	15.05
27313	100	3	2 "	Solid	" " " " " " " ".....	15.95
14313	100	3	2 "	"	" " " " " " " Dead.....	27.30
NON-METER TEST TYPE						
Number	Amps.	Pole	Fused	Neutral	Description	Price
26311	30	3	1 Plug	"	Plug Type Fuse Dead.....	\$ 2.55
26511	30	3	2 Cart.	"	Cart. Type Fuse Dead.....	3.05
SK-659	30	2	2 Cart.	Switched	Cart. Type Fuse Dead.....	4.60
SK-660	60	3	2 "	"	Cart. Type Fuse Dead.....	11.70
SK-674	100	3	2 "	"	Cart. Type Fuse Dead.....	19.20

"Square D" Accessible Main Fuse Type

METER TEST TYPE				Fused		Price
Number	Amp.	Pole				
30391	30	3	3	Cart.	.....	\$10.65
30392	60	3	3	"	.....	20.35
30393	100	3	3	"	.....	30.00

Number	Amp.	Pole	Fused	Price
10391	30	3	3 Cart.....	\$10.05
10392	60	3	3 ".....	18.60
10393	100	3	3 ".....	28.25

METER TEST TYPE					Price
Number	Amp.	Pole	Fused		
36351	30	3	3 Cart.	\$11.00
36352	60	3	3 "	17.50
36353	100	3	3 "	26.50

Number	Amp.	Pole	Fused	Price
SK-671	30	3	3 Cart.....	\$ 4.00
SK-672	60	3	3 ".....	11.76
SK-673	100	3	3 ".....	19.20

End Walls for 30 Amp. Switches.....	10
60 & 100 Amp. Switches.....	8
Trough Closing Plates No. 20533 & 34.....	10
Connecting Trough No. 20733—3½" Long.....	8
20738—8½".....	4
Universal End Wall & Shutters.....	10
Meter Shutter only No. 24358.....	10

No.	Description	Black	Galv. or Cad. Plated
12601.....	With Test Block.....	\$ 7.25	\$10.00
12621.....	Without Test Block.....	5.00	7.70
12611.....	W. P. Meter Sw. Box.....	10.00

250 Volt Fusible			575 V. AC with Arc Suppres. Unfused		
Amps.	2 Pole	3 Pole	Amps.	Description	3 Pole
30	\$85251 \$3.20	\$85351 \$ 5.20	30	575V. Fused...	46341 \$10.00
40	\$6252 \$8.20	\$6352 10.50	30-60	575V. Not Fused	41342 10.90
60	Solid Neutral	\$7312 9.10	60	575V. Fused...	46342 13.60
60	\$6253 \$12.70	\$6353 15.50	100	575V. Not Fused	41343 17.30
100	Solid Neutral	\$7313 14.60	100-150	575V. Fused...	46344 28.20
150	\$6254 \$20.00	\$6354 25.40	200	575V. Not Fused	41344 29.00
200	Solid Neutral	\$7314 22.75	200	575V. Fused...	46344 38.00

"Square D", Quick Make & Break, Single Throw

230 V. D.C. and A.C. Fusible			250-600 V. D.C. and 575 V. A.C. Unfused		
Amps.	2 Pole	3 Pole	Amps.	2 Pole	3 Pole
x30	#88251 \$10.80	#88351 \$13.65	x30	#84252 \$ 9.55	#84351 \$11.40
x60	#88252 13.65	#88352 18.20	x60	#84262 12.75	#84362 15.95
x100	#88253 20.90	#88353 28.30	x100	#84263 20.95	#84363 24.10
x200	#88254 41.80	#88354 56.60	x200	#84264 38.25	#84364 46.00
x400	#88255 81.67	#88355 90.75	x400	#84265 76.50	#84365 92.00
x600	#88256 107.25	#88356 127.85	x600	#84266 118.00	#84366 132.00

x30 Amp. Sp. with 30 Amp. Spacing (x=250 Volts only.)

"Square D", Quik Break, Single Throw

250 Volts		Description		Single Throw	
2 Pole				3 Pole	
No. 83251	\$3.20	Quick Make & Break	No. 83351	\$ 5.20	
91251	2.65	Not Quick Break	91351	4.00	
x46251	7.75	Quick Break Only	x46351	10.00	
(x 60 Amp. Switches with 30 Amp. Clips)					

Cutler-Hammer Single Throw Industrial Type

Series 4131									
250 Volts DC or AC Fuseable					575 Volts AC Fuseable				
Amps	2 Pole	3 Pole	Amps	3 Pole	Amps	4 Pole	Amps	3 Pole	Amps
30	4131H2	\$ 2.90	4131H13	\$ 4.70	30	4131H24	\$ 9.90	4131H34	\$16.50
60	4131H3	7.45	4131H14	9.10	60	4131H25	12.40	4131H35	18.15
100	4131H4	11.55	4131H15	14.00	100	4131H26	19.80	4131H36	33.00
200	4131H5	18.15	4131H16	24.00	200	4131H27	34.65	4131H37	47.00
400	4131H6	44.55	4131H17	61.05					
125-250 Volts Solid Neut. Fuseable					Non-Fuseable Type 250 DC 500-600 AC				
Amps	2 Pole	3 Pole	Amps	2 Pole	Amps	3 Pole	Amps	2 Pole	Amps
30	4131H38	\$ 3.70	4131H48	\$ 7.45	30	4131H58	\$ 4.70	4131H68	\$ 7.45
60	4131H40	5.25	4131H49	10.30	60	4131H59	7.25	4131H69	11.15
100	4131H41	13.20	4131H46	18.60	100	4131H56	9.90	4131H66	14.70
200	4131H42	20.65	4131H47	28.90	200	4131H57	17.35	4131H67	20.65
400	4131H43	57.75	4131H44	74.25	130 Amp 250 Volts Only				

Cutler-Hammer

		2 Pole		3 Pole	
Amps	Description	Numbers	Price	Numbers	Price
30	For Plug Fuses.....	4141H123	\$ 1.80	4141H2-4	\$ 2.20
30	2 Blades & 2 Fuses.....	4141H123	2.25	4141H2-4	2.25
30	For Cartridge Fuses.....	4141H123	2.25	4141H10-10	3.50
30	For Cartridge Fuses.....	H4141H17	2.70		
30	For 2 Cart. Blades & 2 Fuses.....			4141H11	3.25
30	Non-Fusible.....	4141H23	2.35	4141H24	4.10
30	For Cartridge Fuses.....	4141H13	6.75	4141H14-15	8.10
60	For 2 Blades & 2 Fuses.....			4141H16	7.50
100	For Cartridge Fuses.....	4141H18	10.40	4141H19-20	17.70
100	For 2 Blades & 2 Fuses.....			4141H21	11.95

Cutler-Hammer Without End Walls

Meter Test Type				
Live Fuse Type				
30	For Plug Fuses.....	4307 H1&5	\$ 2.95	4307 H9 \$ 3.70
30	For Cartridge Fuses.....	4307 H2&6	3.30	4307 H10 4.05
60	For Cartridge Fuses.....	4307 H3&7	8.45	4307 H11 8.90
100	For Cartridge Fuses.....	4307 H4&8	15.05	4307 H12 16.00
Dead Fuse Type				
30	For Plug Fuses.....	4309 H1	2.40	4309 H2 3.70
30	For Cartridge Fuses.....	4309 H4	3.80	4309 H6 4.30
60	For Cartridge Fuses.....	4309 H7	12.00	4309 H9 13.75
100	For Cartridge Fuses.....	4309 H10&11	21.20	4309 H12 23.00

Cutler-Hammer Without End Walls

Accessible Main Fuses			Without End Wires	
Test Type				
30	For Plug Fuses.....	4325H1&2	\$ 4.00	4325H3 \$ 4.50
30	For Cartridge Fuses.....	4325H4&5	4.80	4325H6 4.80
60	For Cartridge Fuses.....	4325H7&8	15.05	4325H9 15.05
100	For Cartridge Fuses.....	4325H10&11	23.85	4325H12 23.85
Non-Test Type				
30	For Plug Fuses.....	4327H1&2	3.65	4327H3 4.00
30	For Cartridge Fuses.....	4327H4&5	4.60	4327H6 4.60
60	For Cartridge Fuses.....	4327H7&8	14.15	4327H9 15.00
100	For Cartridge Fuses.....	4327H10&11	23.00	4327H12 24.00

Meter Service and Entrance Switches

Description		30 A	60 A	100 A	200 A
Sealed Fuses-Meter Test 3 Phase 3 Wire...		\$11.35	\$17.50	\$37.10	\$48.50
	" " " " " " " "	14.25	26.25	43.75	90.00
Acces.	" " " " " " " "	11.50	20.55	30.60	51.75
	" " " " " " " "	15.45	23.60	47.20	66.30
	" " " " " " " "	10.85	19.25	28.00	44.40
	" " " " " " " "	11.50	19.70	33.25	51.75

Cutler-Hammer

No.	Without End Walls	Price
4311H1	All 30 Amp. Standardized Meter Service Switches	\$3.70
4311H2	Branch Circuit Type.	4.00
4311H3		4.60
4311H4 & 5		5.20

Cutler-Hammer

Single Piece End Wall used with Cabinet.....	\$.35	\$.80
Shutters for Shutter Type End Wall.....	.15	.30
Conduit End Wall.....	.35	.60
Universal End Wall.....	.35	

TYPE "A" SWITCHES

Single Throw—Series #111									
Fusible 250 Volt DC or AC			Fusible 575 Volt AC						
Amps.	2 Pole	3 Pole	Amps	2 Pole	3 Pole				
30	4111H11	\$ 9.90	4111H20	\$12.40	30	4111H111	\$14.85	4111H330	\$18.10
60	4111H12	12.40	4111H21	16.50	60	4111H112	15.70	4111H331	19.00
100	4111H13	19.00	4111H22	24.75	100	4111H113	24.75	4111H332	28.90
200	4111H14	35.00	4111H23	37.10	200	4111H114	38.80	4111H333	47.80
400	4111H15	74.25	4111H24	82.50	400	4111H115	90.75	4111H334	99.00

These prices apply only to the United States

Electrical Contracting, January, 1932

TYPE "A" SWITCHES Single Throw—Series 4111

Non-Fusible 250DC or 500-600 AC									
Amps		2 Pole		3 Pole		Amps.		3 Pole	
x30	4111H74	\$ 8.65	4111H84	\$10.30	200	4111H77	\$25.60	4111H87	\$31.35
30-60	4111H75	\$ 12.40	4111H85	\$ 14.45	400	4111H78	\$ 74.25	4111H88	\$ 82.50
100	4111H76	\$ 19.00	4111H86	\$ 21.85	x250 V. only.				

MOTOR STARTING SWITCHES

Manual Operated			Cutler-Hammer				
Single Pole Push Button with Overload Protection			Single Pole Push Button with Overload Protection				
Type of Switch	Type of Relay	Number	15 V. D. C.	110 V. A. C.	220 V. A. C.	Cycles	Price
Open.....	Fast Trip	9101H1	1/4 H. P.	1/4 H. P.	1/4 H. P.	25-60	\$2.60
Enclosed....	"	9101H2	"	"	"	"	3.40
Open.....	Slow	9101H3	"	"	"	"	2.60
Enclosed....	"	9101H4	"	"	"	"	3.40

Series	Description	Amps	Volts	2 Pole	3 Pole	4 Pole
4151H1	Light Duty Motor Sw. 1/4 HP or Less.....	30	115	\$ 1.60		
9115H23	Motor Switch with Thermal Cutout.....	30	To 550	\$12.65	\$17.55	
4231H	For infrequent Duty.....	30	220	5.95	6.20	8.80
4246H	For infrequent Duty 1/2 HP.....	30	220	11.40	11.95	13.40
4246H	For infrequent Duty 3/4 HP.....	30	440		17.80	21.45
4246H	For infrequent Duty 1 HP.....	60	220	15.70	17.80	24.35

SMALL ENTRANCE SWITCHES

Trumbull Electric Closed or Open Ends	
Numbers	Amps. Volts Fusing 2 Pole 3 Pole
5790 EW Porc. Base.....	30 125 For 1 Plug Fuse.....\$1.70
5791-2-3-4 & 5893.....	30 125 " Plug Fuses.....1.85 \$3.45
5801-5892 Porc. Base.....	30 125-250 " ".....1.85 2.40
13040-13041 Kappa.....	30 250 No Fuse-Slate Base.....2.75 4.10
13042-43 & 13745 Kappa.....	30 250 For Enclosed Fuses.....2.75 4.55
13221-13321 Quick Break.....	30 250 " ".....3.55 5.20

STANDARDIZED MAIN ENTRANCE SWITCHES

Trumbull Electric Single Phase or DC Solid End Plate	
Numbers	Amps. Volts Fusing 2 Pole 3 Pole
16361 to 16368.....	30 125-250 For Plug Fuses.....\$3.30 \$4.10
16371 " 16378.....	30 " " Enclosed Fuses.....3.65 4.40
16381 " 16388.....	60 250 " ".....9.25 9.70
16391 " 16398.....	100 250 " ".....15.85 16.75

STANDARDIZED METER SERVICE SWITCHES

Trumbull Electric For Meter Testing Open End Without End Walls	
Numbers	Amps. Volts Fusing 2 Pole 3 Pole
16300 to 16309.....	30 125-250 For Plug Fuses.....\$ 2.95 \$ 3.75
16315 " 16324.....	30 " " Enclosed Fuses.....3.35 4.10
16330 " 16338.....	60 " " ".....8.45 8.90
16341 " 16348.....	100 " " ".....15.05 15.95

ACCESSIBLE FUSE METER SWITCHES

Trumbull Electric With Test Blades With and Without End Walls	
Numbers	Amps. Volts Fusing 2 Pole 3 Pole
18111.....	30 125 For 1 Plug Fuse.....\$ 3.55
18211-18311.....	30 125 " Plug Fuses.....4.05 \$4.65
18121.....	30 125-250 " 1 Enclosed Fuse.....3.95
18221-18321.....	30 30 " Enclosed Fuses.....4.90 4.90
18122-222-322.....	60 " " ".....15.50 16.75
18123-223-323.....	100 " " ".....24.65 26.40

Without Test Blades

Numbers	Amps. Volts Fusing 2 Pole 3 Pole
†19111.....	30 125 For 1 Plug Fuse.....\$ 3.35
†19211-19311.....	30 125-250 " Plug Fuses.....3.70 \$4.05
†19121.....	30 " " 1 Enclosed Fuse.....3.95
†19221-19321.....	30 30 " Enclosed Fuses.....4.65 4.65
†19122-222-322.....	60 " " ".....14.50 15.85
†19123-223-323.....	100 " " ".....23.35 24.65

SEALED FUSE METER SWITCHES

Trumbull Electric With Test Blades With and Without End Walls	
Numbers	Amps. Volts Fusing 2 Pole 3 Pole
†15827.....	30 125 For 1 Plug Fuse.....\$ 2.40
†28111-28311-28311.....	30 125 " Plug Fuses.....3.55 \$ 3.75
†28121.....	30 125 " 1 Enclosed Fuse.....3.85
†28221-28321.....	30 125-250 " Enclosed Fuses.....4.10 4.35
†28122-28222-28322.....	60 " " ".....13.25 14.50
†28123-223-323.....	100 " " ".....22.00 23.75

Without Test Blades

Numbers	Amps. Volts Fusing 2 Pole 3 Pole
†29111.....	30 125 For 1 Plug Fuse.....\$ 3.10
†29211-29311.....	30 125-250 " Plug Fuses.....3.10 \$ 3.30
†29121.....	30 " " 1 Enclosed Fuse.....3.45
†29221-29321.....	30 250 " Enclosed Fuses.....3.75 3.90
†29122-222-322.....	60 " " ".....12.35 13.65
†29123-223-323.....	100 " " ".....20.70 22.00

UNIVERSAL METER SERVICE SWITCHES

Trumbull Electric Without End Walls	
Numbers	Amps. Volts Fusing 2 Pole 3 Pole
†971-123.....	30 125 For 1 Plug Fuse.....\$3.75
972-123.....	30 125 For 1 Plug Fuse.....4.70
973-333.....	30 125 For 2 Plug " Solid Neu.....\$4.10
975-333.....	30 125 For 3 Combinations.....5.30 5.30
979-333.....	30 125 For 4 Combinations.....5.30 5.30

POLYPHASE ENTRANCE & METER SWITCHES

POLYBSE EXTERIOR WATER SWITCHES					
Trumbull Electric					
Series Nos.	Style	3 Wire	4 Wire	3 Wire	4 Wire
16379	Entrance—"DO-ALL"	\$ 4.70			
15321-15623	Acc. Fuse—Test Conn.	11.60	\$15.60	\$21.10	\$37.00
17321-17623	Acc. Fuse without Test Conn.	10.95	12.80	19.40	22.00
26321-26623	Sealed Fuse with Test Conn.	11.50	14.40	17.60	33.50

Series Nos.	Style	3 Wire	4 Wire
15321-15623	Acc. Fuse—Test Conn.	\$30.80	\$47.50
17321-17623	Acc. Fuse without Test Conn.	22.00	28.00
26321-26623	Sealed Fuse with Test Conn.	27.30	44.00

Series Nos.

Series Nos.	Style	3 Wire 100 Amp.	4 Wire 100 Amp.
15321-15623	Acc. Fuse—Test Conn.	\$30.80	\$47.50
17321-17623	Acc. Fuse without Test Conn.	29.05	33.45
26321-26623	Sealed Fuse with Test Conn.	27.30	44.00

ENTRANCE RANGE AND LIGHTING SWITCH

†18422-2W Switch with 1-60 A., 250 V. & 2-30 A. 125 V. Branches.....	\$23.00
18422-4W Switch with 1-60 A., 250 V. & 4-30 A. 125 V. Branches.....	23.80

END WALLS, SHUTTERS, TROUGHS, ETC.

Trumbull Electric				
	30 A.	60 A.	100 A.	
End Wall One Piece for Standardized Switches.....	\$.30	\$.80	\$.80	
End Wall One Piece for Polyphase Switches.....	.30	.50	.80	
Shutters for End Walls for Standardized Switches.....	.15	.30	.30	
Shutters for End Walls for Polyphase Switches.....	.15			
Troughs 2-3" & 4....	\$.40	5"....\$.45	6"....\$.50	7"....\$.55

TYPE "A" INDUSTRIAL SWITCHES

Trumbull Single Throw, Quick Make & Break	
Amps	2 Pole AC-DC 3 Pole AC Only 2 Pole AC-DC 3 Pole AC Only
30.....	72221 \$10.95 72321 \$13.65 36221 \$ 9.60
60.....	72222 13.65 72322 18.20 36222 11.85
100.....	72223 20.95 72323 27.30 36223 20.00
200.....	72224 36.40 72324 41.00 36224 25.50

Trumbull "SNUF-ARC" TYPE

Fusible		No Fuse	
2P. 230-575	3P. 230-575	2P. 575V	3P. 230-575
Amps	AC & DC AC Only	AC & DC AC Only	AC Only
30.....	72261 \$16.40 72361 \$20.00	36261 \$12.75	* 36321 \$11.40
60.....	72262 17.30 72362 21.00	36262 13.65	36362 15.95
100.....	72263 27.30 72363 31.85	36263 20.95	36363 24.10
200.....	72264 43.25 72364 52.80	36264 28.30	36364 34.60

*230 V. A.C. no "Snuf Arc"

TYPE "C" SWITCHES

Trumbull Single Throw, Quick Make & Break	
Amps	2 Pole AC-DC 3 Pole AC Only 2 Pole AC-DC 3 Pole AC
30.....	40221 \$ 5.50 40321 \$ 6.85 20221 \$ 5.00 20321 \$ 6.40
60.....	40222 8.20 40322 10.00 20222 8.20 20322 8.65
100.....	40223 12.75 40323 15.50 20223 10.95 20323 12.30
200.....	40224 20.00 40324 26.40 20224 19.10 20324 22.75

Amps	2P. AC-DC 3 Pole V.A.C. 3 Pole Blades 4 Pole Blades
30.....	44222 \$ 8.15 44322 \$10.00 43322 \$ 9.90 43422 \$11.35
60.....	44223 12.70 44323 15.40 43323 14.50 43423 20.40
100.....	44224 20.00 44324 26.30 43324 22.70 43424 31.75

WESTINGHOUSE

All 30 Amp. Porcelain Base

"Midget"—S. N.—1 Blade—1 Fuse—#62613		2 Pole	3 Pole
"Type 00" Fusible—125-250 V.....	1.80	\$60961 \$5.00	
"S. N.—".....	5.00	1.75	\$62328 2.70
"S. N. 3 Blades.....			60962 3.00
"Not Fusible—2 Blades—250 Volt.....	60990	2.55	62352 2.70
"Fusible Cart. Fuses—250 V.....	60999	2.45	62365 4.00
"S. N. 250 V.....			62363 4.30
"Type WK-45" Fusible Cart. Fuses—3 Blades.....			62351 3.20
Blades—250 V.....			62364 4.30
"Type WK-45" S. N. Fusible Cart. Fuses—3 Blades—250 V.....	54501	5.20	545101 5.20
"2 & 3 Blades—250 V.....	54501	5.20	545341 5.20
"Type WK-45" Non-Fusible—2 and 3 Pole—3 Blades.....	545001	4.20	545001 4.20

TYPE C METER ENTRANCE

Westinghouse "WK-62" Quick Break	
60 Amp.—230 Volts.....	2 Pole Fusible 3 Pole Fusible 4 Pole Fusible
100 "—230 ".....	62304 \$ 9.15 62305 \$10.90 62307 \$13.60
200 "—230 ".....	62308 13.60 62309 17.25 62311 29.05
	62312 21.80 62313 29.05 62315 47.30

SOLID NEUTRAL FUSIBLE

60 Amp.—3 Poles.....	2 Blades—2 Fuses 3 Blades—3 Fuses
100 "—3 ".....	62332 \$ 9.15 62306 \$10.90
200 "—3 ".....	62330 14.55 62310 17.25
	62331 22.70 62314 29.05

UNIVERSAL METER SERVICE SEALED MAIN FUSES

Westinghouse "WK-57" Meter Testing	
One & Two Circuit	All 30 Amp. Four Circuit
57924 \$3.70	57925 \$5.00
57926 4.05	125 Volt For 57499 4.60
57928-31 5.60	Plug Fuses 57928 5.60
57498 5.25	57500 5.25

STANDARDIZED METER SWITCHES

Westinghouse "WK-54" Without End Walls									
		Dead Fuse Type				Live Fuse Type			
		2 Pole		3 Pole		2 Pole		3 Pole	
Amps.	Fused For Plug	No.	Price	No.	Price	No.	Price	No.	Price
30	Enclosed	61140	\$ 2.40			60224	\$ 2.95	59442	\$ 3.70
30		61143	3.50	61142	\$ 3.75	59441	2.95	59225	3.70
30		61639	3.80			54371	3.30	60227	4.05
30		61145	4.10	61144	4.30			59448	4.05
60		61244	12.80	61268	13.65	59461	8.40	60229	8.35
100		61275	21.10	61494	22.80	59463	14.95	60232	15.90

METER SERVICE AND ENTRANCE SWITCHES

ACCESSIBLE FUSE TYPE									
Westinghouse "WK-65"									
		With Test Facilities				Without Test Facilities			
		2 Pole		3 Pole		2 Pole		3 Pole	
Amps.	Fused For Plug	No.	Price	No.	Price	No.	Price	No.	Price
30	Enclosed	65000	\$ 3.50			65010	\$ 3.30		
30		65001	4.00	65002	\$ 4.35	65011	3.65	65012	\$ 4.00
30		65005	3.90			65003	3.90		
30	"	65003	4.85	65004	4.85	65013	4.60	65014	4.80
60		65005	14.95	65006	15.85	65015	14.10	65016	14.80
100		65007	23.70	65008	25.45	65017	22.80	65018	23.70

These prices apply only to the United States

30 Amp.	#60266-3 Pole	-230 Volt AC—Less End Wall.....	\$10.90
60 "	60267-3 " "	" " " " " "	18.70
100 "	60268-3 " "	" " " " " "	26.30

	Meter Test	3Phase 4W.-S.N.	Non-Meter Test
30 Amp—Less End Walls..	65100 \$11.00	65143 \$15.00	65103 \$10.40
60 " " " " " "	65101 20.20	65146 35.95	65104 18.45
100 " " " " " "	65102 29.80	65141 46.45	65105 28.05

One Piece Meter Trims.....	30 Amp. 60 & 100 Amp.
Blank End Wall or Shutter Type End Wall.....	\$0.35
Shutter Type Meter Trim or Adapter Trim.....	.15
New Universal Trim with Slide.....	.15
Replacement Plate or Adapting Plate.....	.15
Wiring Through 2-3 & 4" Long. 40c-6", 45c-6", 50c-7", 55c-8".00c.	
Fuse Receptacle #R57252.....	Less Fuses.....
\$1.25

Amps.	250 V. DC—230 V. AC—Fusible		600 V. DC—575 V. AC—Fusible	
	2 Pole	3 Pole	2 Pole	3 Pole
30	66100	\$10.90	66101	\$12.70
60	66103	13.60	66104	18.15
100	66106	20.90	66107	27.25
200	66109	38.30	66110	47.85
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250 V. DC-230 V. AC-Non-Fusible		575 Volt AC-Fusible		
Amps.	2 Pole	3 Pole	4 Pole	
30	\$97100 \$ 5.45	\$97101 \$ 6.80	\$97151 \$10.90	\$97152 \$15.15
60	\$97103 8.15	\$97104 10.00	\$97154 13.60	\$97155 18.95
100	\$97106 12.70	\$97107 15.45	\$97157 21.80	\$97158 36.30
200	\$97109 19.95	\$97110 26.30	\$97160 35.10	\$97161 51.75
250 V. DC. & 230 V. AC-Non-Fusible		575 Volts AC-Non Fusible		
Amps.	2 Pole	3 Pole	4 Pole	
30	\$97010 \$ 5.00	\$97011 \$ 6.35	\$97054 \$10.90	\$97055 \$15.15
60	\$97013 8.15	\$97014 10.00	\$97056 13.60	\$97057 18.95
100	\$97016 12.70	\$97017 15.45	\$97058 21.80	\$97059 36.30
200	\$97019 19.95	\$97020 26.30	\$97060 35.10	\$97061 51.75

Number	Amp.	Volt	Fuses	Blades	Neutral 2 Pole	3 Pole
8283.....	30	125	1 Plug	1	Solid	\$1.75
8383.....	30	125	2 "	2	Fused	1.80
8393.....	30	125-250	2 "	2	Solid	\$2.50
8483.....	30	250	2 N.E.C.	2	Fused	1.80
8293.....	30	250	3 "	3	Fused	5.00
8136-1.....	60	125-250	2 "	2	Solid	8.25
8221-1.....	60	250	2 "	2	Fused	7.50
8131-1.....	125	250	2 "	2	Fused	15.00
8221-1.....	100	250	2 "	2	Fused	11.50

Sealed Service			No End Wall		
Number	Amp.	Volt	Fuses	Blades	Neutral 2 Pole 3 Pole
9903.....	30	125	1 Plug	1	Solid * \$2.40
9543.....	30	125	1 "	1	" 3.50
9553-9523..	30	125-250	2 "	2	Fused-Solid 3.50 \$3.75
9563.....	30	125-250	2N.E.C.	2	Fused 4.10
9533.....	30	125-250	2 "	2	Solid 4.30
9573.....	30	125	1 "	1	" 3.80
66576.....	60	230	1 "	1	" 11.90
66566.....	60	230	2 "	2	None 12.80
66536.....	60	125-250	2 "	2	Solid 15.65
66561-66571	100	250	1or2 "	1 or 2	None 21.00
66531.....	100	125-250	2 "	2	" 22.85

Amps.	Fused For	Meter Service Test Type				Entrance Non Test			
		2 Pole		3 Pole		2 Pole		3 Pole	
		No.	Price	No.	Price	No.	Price	No.	Price
30A	Plug.....	9343	\$ 3.55			8343	\$ 3.80		
30A	".....	9353	4.00	9323	\$ 4.50	8353	3.65	8323	\$ 4.00
30A	".....	9363	4.55	9333	4.85	8363	4.00	8333	4.60
30A	Enc.....	9373	9.90			8373	9.90		
60A	".....	6636	14.95	6635	15.80	7636	14.10	7636	14.95
100A	".....	66361	23.70	66331	25.45	76361	22.85	76331	23.70

No. 66336RLA.. Range and Lighting Sw. 1-60A. 250V. and 4-30A. 125V. Branches.....	\$23.80
No. 66336RL6.. Range and Lighting Sw. 1-60A. 250V. and 6-30A. 125V. Branches.....	28.25
No. 30..... Meter Back Plate and Switch Support for above.....	2.00

Number	Switch		Branch Circuits				
	Blades	Fuses	Circuits	Fuses	Fuse in Cir.	2 Pole	3 Pole
971123.....	1	1	2	2	1	\$3.75	
9723-972123.....		1	4	4	1	5.00	
973333.....	1 or 2	1 or 2	1 or 2	2	1 or 2	4.05	\$4.05
9753-9793.....	1 or 2	1 or 2	2 or 4	4	1 or 2	5.65	5.65
975333-979333.....	1 or 2	1 or 2	2 or 4	4	1 or 2	5.25	5.25

		2 Pole		3 Pole	
Amps.	Fused For	Numbers	Price	Numbers	Price
30A	Plug.....	918123-911123	\$ 2.95	912333-914333	\$ 3.75
30A	Enclosed.....	921223	3.30	922333-924333	4.05
60A	".....	921226	8.40	925336	8.90
100A	".....	921221	14.95	925331	15.85

2 Pole			3 Pole		4 Pole	
Amp.	Number	Price	Number	Price	Number	Price
30	8223	\$ 3.15	8233	\$ 5.15	8243	\$ 8.65
60	8226	8.15	8236	10.00	8246	12.70
100	8221	12.70	8231	15.40	8241	26.30
200	8222	19.95	8232	26.30	8242	43.55
400	8224	49.00	8234	67.15	8244	86.65

		3 Pole	4 Pole
Amp.		Number	Price
30		8933	\$ 5.20
60	All Solid	8936	10.00
100	Switching Neutral	8931	15.40
200		8932	26.30
400		8934	67.15
		8943	\$10.00
		8946	14.50
		8941	28.15
		8942	45.40
		8944	90.75

	2 Pole 250 V.-DC-230-AC	3 Pole 230 Volts AC	4 Pole 230 Volts AC
30	\$723	\$ 5.15	\$ 8.15
60	\$726	8.65	13.60
100	\$721	12.25	20.90
200	\$722	22.70	38.10
400	\$724	47.20	63.55

575Volts AC Fusible				575 Volts Non-Fusible			
3 Pole		4 Pole		3 Pole		4 Pole	
Amp.	Number	Price		Number	Price	Number	Price
30	8433	\$10.90		8443	\$18.15	8633	\$ 8.15
60	8436	13.60		8446	19.95	8636	10.90
100	8431	21.80		8441	36.30	8631	17.25
200	8432	38.10		8442	51.75	8632	29.00

Single Piece End Wall for 30 Amp. Switches...	\$.30	For 60 & 100 Amp...	\$.80
Shutter for 30	.15	60 & 100	.30
Universal End Wall No. 908103	.40		
Blanking Side No. 908103-908203	.15		
Trough—3 & 5' 4.40—6' 4.45—7'	.50	8'—8.55—9'	.80
Cabinet Fuse Block No. 902413	1.25		

Meter Service and Entrance Switches							
125-250 Volts				Without End Walls			
Main Entrance		"ACCO" QUAD BREAK		"ACCO" QUAD BREAK		"SECO" QUAD BREAK	
"DOALL"—3 WIRE Accessible Fuses				Sealed Fuses			
Amp. Number	Price	Number	Price	Number	Price	Number	Price
30	\$51236	8.65	\$77033	\$10.40	\$70731	\$11.05	\$7533
60	\$51236	11.60	\$77030	18.45	\$70730	20.20	\$7536
100	\$51231	19.05	\$77031	28.05	\$70731	30.00	\$7531

Amps.	Volts	3 Pole-2 Blades No. Price	4 Pole-3 Blades No. Price	5 Pole-4 Blades No. Price
30	125-250	8133 \$ 4.10	8143 \$ 8.15	8153 \$12.70
60	" "	8136 9.10	8146 11.35	8156 19.95
100	" "	8131 14.50	8141 20.45	8151 35.85
200	" "	8132 22.70	8142 31.75	8152 50.82
400	" "	8134 63.55	8144 81.70	8154 111.00

Cat. Number	Volt	Poles	Blades	Fuses	Neutral	30 Amp. Switches	Price
92311 & T-82311	125	2	1	1 Plug			\$1.80
90211	125	2	2	2 "			4.55
90311	115	3	3	3 "			8.20
92311	125-250	3	2	2 "	Solid		5.00
91311	125-250	3	3	3 "	"		7.25
92221	250	2	1	1 Cart.			1.80
90221	250	2	2	2 "			5.45
90821	250	3	2	2 "			8.20
91321	250	3	3	3 "	Solid		7.75
90351	575 A. C.	3	3	3 "			12.75
81321-81321U	230-460	3	3	3 "			9.15

Single Throw		Fusible		Type "C"	
Amps	250 Volts DC—230 Volts AC	2 Pole	3 Pole	3 Pole	4 Pole
30 A. Porc. Base.....	50221S	3.20	50321S	5.15	
30 A. End Plates.....	50221P	3.20	50321P	5.15	
30 A. Slate Base.....	50221	5.40			
60 A. ".....	50222	8.20	50322	10.00	
100 A. ".....	50223	12.70	50323	21.80	
200 A. ".....	50224	20.00	50324	36.30	
400 A. ".....	50225	49.00	50325	87.15	

TYPE "C" NON-INTERLOCKING—Continued

Single Throw	Fusible	Type "C"
Solid Neutral Blades Omitted	3 Pole 2 Blades 2 Fuse Holders 230 V.-AC & DC	4 Pole 3 Blades 3 Fuse Holders 115-230 V.-AC
x 30 Amp. Type C	52311P \$ 2.50	52321 \$ 12.75
30 " " " "	52321P 3.20	52421 11.40
60 " " " "	52322 9.10	52422 20.00
100 " " " "	52323 14.60	52423 36.00
200 " " " "	52324 22.75	52424 51.00
400 " " " "	52325 63.75	52425 122.00

x This Switch for 125 Volts Ed. Plug Fuses.

	2 Pole	3 Pole	4 Pole
30 A. 2 Pole—250 Volt.	53221S \$ 3.20	53321S \$ 4.00	53421S \$ 5.90
30-60 A. DC and 230 Volts	53222 8.15	53322 8.65	53422 13.60
100 A. AC 3 & 4 Pole	53223 10.90	53323 12.25	53423 20.90
200 A. 230 Volts	53224 19.00	53324 22.70	53424 38.10
400 A. AC Only	53225 38.30	53325 47.20	53425 63.50

30 AMP. SERVICE ENTRANCE SWITCHES

Cat. Number	Bulldog—Not Meter Test	Price
100211S & P	125 2 Fusible—For Plug Fuses	\$1.65
104211S	125 2 " " " " " " " " " " " "	2.75
100221S & P	250 2 " " " " " " " " " " " "	2.50
103221S & P	250 2 Not " " " " " " " " " " " "	2.75
100311SP & 101311P	115 3 A.C. Plug Fuses	3.00
104311S	115 3 A.C. " " " " " " " " " " " "	4.35

MAIN SERVICE
Meter Test Switches

Number	Amp.	Volt	Neutral	Branches	Price
721204	60	125-250	3	Solid 1-60A & 4-30A	\$24.10
721206	60	125-250	3	1-60A & 6-30A	28.50
431101				Meter Mounting Plate and Cabinet Support	1.10
412112				" End Plate	.30

"TYPE A"

Bulldog Single Throw Quick Make and Break

Amps.	2 Pole	Price	3 Pole	Price	4 Pole	Price
250 V. DC & 230 V. AC Fusible	No.		No.		No.	
30 Amp.	10221	\$10.90	10321	\$13.60	10421	\$16.35
60 Amp.	10222	13.60	10322	18.15	10422	21.80
100 " "	10223	20.90	10323	27.25	10423	36.30
200 " "	10224	36.30	10324	40.85	10424	54.45
400 " "	10225	81.70	10325	82.50	10425	107.25
575 Volts—AC Fusible	No.		No.		No.	
30 Amp.	10261	\$16.35	10351	\$19.95	10451	\$24.50
60 " "	10262	17.25	10352	20.90	10452	26.30
100 " "	10263	27.25	10353	31.75	10453	41.75
200 " "	10264	42.65	10354	52.65	10454	63.50
400 " "	10265	90.75	10355	99.00	10455	128.00
Not Fusible	230 V.-AC, D.C.		575 A.C. Arc Chok		575 A.C. Arc Chok	
30 Amp. 230 Volts only	13221	\$11.35	13421	\$16.35		
30-60 Amp.	13222	9.55	13352	15.90	13452	21.80
100 " "	13223	18.15	13353	34.05	13453	31.75
200 " "	13224	25.40	13354	34.50	13454	46.30
400 " "	13225	54.45	13355	82.50	13455	107.25
Not Fusible	600 V.-AC & DC					
30-60 Amp.	13262	\$12.70				
100 " "	13263	20.40				
200 " "	13264	27.65				
400 " "	13265	66.25				

COMPENSATOR SWITCHES

Bulldog Quick Make & Break Fusible

Amps.	3 Pole	230 Volt AC	4 Pole	Price
30 A.	30331	\$16.35	30421	\$ 25.40
60 A.	30332	20.40	30422	26.30
100 A.	30333	28.15	30423	47.20
200 A.	30334	46.30	30424	65.35
400 A.	30335	86.60	30425	118.80
Amps.	3 Pole	575 Volts AC Arc Chokers		
30 A.	30351	\$23.10		
60 A.	30352	23.60		
100 A.	30353	37.30		
200 A.	30354	54.90		

MOTOR STARTERS

Bulldog

Amps.	3 Pole	4 Pole	Price
30 Amp.—Type A—230 Volts AC	40321	\$16.35	40421 \$22.70
60 " " " "	40322	22.70	40422 31.75
100 " " " "	40341	22.70	40441 31.75
60 " " " "	40342	32.70	

NOTE: For Bulldog Switches not listed deduct 10% from Bulldog Lists.

SMALL ENTRANCE SWITCHES

Columbia, 30 Amp.

Description	2 Pole	Price
Single Fused Single Blade—125 Volt—Plug Fused	330-321	\$1.50
Double " " " "	1930	1.25
" " " " " "	3930	1.90
" " " " " "	323	2.95
" " " " " "	423	2.60
Description	3 Pole	Price
Single Fused Single Blade—125 Volt—Plug Fused	1931-3	\$2.15
Double " " " "	3931-2	2.45
" " " " " "	323	4.00
" " " " " "	423	4.40

ENTRANCE SWITCHES

Range and Lighting Columbia 3 Pole 125-250 Volt

Cat. No.	Amp.	Branches	Price
3551	60	1-30A-1-60A. 250V. N. E. C. Fused & 2-30A. Plug Fused	\$34.60
3552	60	1-30A-1-60A. 250 V. " " " " " "	35.40
3553	60	1-30A-1-60A. 250 V. " " " " " "	35.60

BRANCH CIRCUIT ENTRANCE SWITCHES

Columbia

30 Amp. Series	2 Pole	3 Pole	4 Pole	5 Pole	6 Pole	7 Pole	8 Pole
2401 to 2406	\$3.90	\$4.90	\$5.20	\$5.85	\$6.20	\$7.15	\$7.15
3401 to 3406	4.90	6.20	6.50	7.15	8.45	9.80	9.80
3501 to 3506	4.75	5.85	6.20	6.90	7.80	8.45	8.45

Series 30—Quick Break—250 Volts for Meter Trims

For Cartridge Fuses

	30 Amp.	60 Amp.	100 Amp.	200 Amp.
2 Pole	3022 \$5.55	3025 \$ 8.75	3028 \$12.50	3031 \$18.20
3 Pole	3023 7.50	3026 10.00	3029 16.15	3032 24.00

INDUSTRIAL SWITCHES

Columbia

Series 70 Type C Fusible	Amps	2 Pole	Price	3 Pole	Price
250 Volts Fusible Quick Make & Break	30A	C7001	\$ 9.30	C7002	\$11.50
	60A	C7004	12.00	C7005	15.00
	100A	C7007	18.85	C7008	23.65
	200A	C7010	27.95	C7011	34.65

Series 70 Type A Fusible	Amps	2 Pole	Price	3 Pole	Price
250 Volts Fusible Quick Make & Break	30A	A7001	10.30	A7002	\$12.85
	60A	A7004	13.10	A7005	17.30
	100A	A7007	21.45	A7008	27.50
	200A	A7010	30.50	A7011	38.85

Series 71-500 Volts Fusible	Amps	2 Pole	Price	3 Pole	Price
500 Volts Quick Make & Break	30A	7101	\$13.60	7102	\$15.50
	60A	7104	14.00	7105	16.00
	100A	7107	23.50	7108	26.05
	200A	7110	37.70	7111	42.25

Series 73-500 Volts Unfused	Amps	2 Pole	Price	3 Pole	Price
500 Volts Quick Make & Break	30A	7301	\$10.80	7302	\$12.70
	60A	7304	10.90	7305	13.25
	100A	7307	17.15	7308	19.20
	200A	7310	23.65	7311	28.45

Series 72-600 Volts Fusible	Amps	2 Pole	Price	3 Pole	Price
600 Volts Quick Make & Break	30A	7201	\$14.60	7202	\$16.05
	60A	7204	14.60	7205	16.00
	100A	7207	24.10	7208	27.15
	200A	7210	38.60	7211	42.50

Series 74-600 Volts Unfused	Amps	2 Pole	Price	3 Pole	Price
600 Volts Quick Make & Break	30A	7401	\$11.70	7402	\$14.35
	60A	7404	12.45	7405	14.95
	100A	7407	18.90	7408	21.45
	200A	7410	25.15	7411	29.25

Series 20-250 Volts Fusible	Amps	2 Pole	Price	3 Pole	Price
Quick Break Only	30A	2022	\$ 5.10	2023	\$ 6.85
250 Volts	60A	2025	6.85	2026	7.90
	100A	2028	10.85	2029	13.35
	200A	2031	19.10	2032	23.85

Series 23-250-500 Volts Unfused	Amps	2 Pole	Price	3 Pole	Price
Quick Break Only	30A	2322	\$ 4.75	2323	\$ 6.35
250 Volts	60A	2325	8.95	2326	9.55
	100A	2328	11.35	2329	12.55
	200A	2331	19.10	2332	23.40

Wadsworth Switches

Single Phase and D. C. MAIN ENTRANCE SWITCHES

Number	Amps.	Volts	Poles	Blades	Fuses	Neutral	Accessible Fuses	Price
1450-1250	30	125	2	1	1 Plug	Solid		\$ 3.55
1403-1202	30	125	2	2	2 " "	None		3.90
1403-1203	30	125-250	3	2	2 " "	Solid		4.25
2202	30	125	2	1	1 NEC	" "		4.15
2203	30	250	2	2	2 " "	None		4.85
2203	30	125-250	3	2	2 " "	Solid		4.85
1800	60	125	2	1	1 " "	" "		13.90
1802	60	125 or 250	2	2	2 " "	None		14.75
1803	60	125-250	3	2	2 " "	Solid		15.65
1900	100	125	2	1	1 " "	" "		22.60
1902	100	125 or 250	2	2	2 " "	None		23.45
1903	100	125-250	3	2	2 " "	Solid		34.35
4603	200	125-250	3	2	2 " "	" "		44.50
4603	400	125-250	3	2	2 " "	" "		93.00

MAIN ENTRANCE SWITCHES POLYPHASE

Number	Amps.	Volts	Poles	Blades	Fuses	Neutral	Accessible Fuses	Price
2230	30	250	3	3	3 NEC	None		\$10.40
1830	60	250	3	3	3 " "	" "		19.10
1930	100	250	3	3	3 " "	" "		28.70
4630	200	250	3	3	3 " "	" "		44.50

These prices apply only to the United States

Single Phase and D. C.	METER SERVICE SWITCHES—Continued					
					Accessible Fuses	
1451	30	125	2	1	1 Plug	Solid \$ 3.80
1412-1212	30	125	2	2	2	None 4.25
1423-1223	30	125-250	3	2	2	Solid 4.75
2251	30	125	2	1	1 NEC	Solid 4.16
2212-2223	30	125 or 250	2 & 3	2	2	None & Solid 5.05
1851	60	125	2	1	1	Solid 14.75
1812-1842	60	125 or 250	2	2	2	None 15.65
1843	60	125-250	3	2	2	Solid 10.50
1951	100	125	2	1	1	Solid 24.85
1912-1942	100	125 or 250	2	2	2	None 24.85
1943	100	125-250	3	2	2	Solid 28.10
4643	200	125-250	3	2	2	Solid 51.75
4843	400	125-250	3	2	2	Solid 109.15

POLYPHASE							
2234	30	250	3	3	3	None	\$11.25
1834	60	250	3	3	3	"	20.85
1934	100	250	3	3	3	"	30.45
4634	200	250	3	3	3	"	60.65

METER SERVICE SWITCH—Range and Lighting Circuits	
No. 1843-5	Accessible Fuse 60 Amp. 125-250 Volt—Branches 2-60 Amp. NEC Fused & 4-30 Amp. Plug Fused.....
No. MB-4	Metal Meter Board Only for Above.....
	\$23.65 2.25

CHANNEL BANKING TYPE

CHANNEL BANKING TYPE						Meter Service & Main Entrance
All 30 Amp.			Access. Fuses		No Test	
Volts	Poles	Blades	Fuses	Neutral	Price	
125	2	1	1 Plug	Solid	1451T	
125-250	3	2			1402T	
125	2	2	2 *	None	1412T	
125	2	1	1 NEC	Solid	2251T	
250	2	2	2 *	None	2212T	
125-250	3	2	2 *	Solid	2223T	
					Price	
					Number	
					\$ 4.05	
					4.55	
					4.70	
					4.55	
					5.25	
					5.25	
					5.25	

METER SERVICE SWITCHES

Number	Amps.	Volts	Poles	Blades	Fuses	Neutral	Sealed Fuses	Price
162	60	250	2	2	2 NEC	None		\$ 9.14
161	60	125-250	3	2	2 *	Solid		9.54
112	100	250	2	2	2 *	None		15.64
111	100	125-250	3	2	2 *	Solid		16.50

SERVICE FUSES DEAD WITH SWITCH OPEN

36	30	125	2	1	1 Plug	Solid	\$ 2.65
238	30	125	2	1	1 "	"	4.00
X360	30	125	2	1	1 "	"	3.45
X362	30	125	2	1	1 "	"	4.45
272	30	125	2	2	2 "	None	4.30
271-292	30	125-250	3	2	2 "	Solid	4.30
2351	30	125	2	1	1 NEC	"	4.01
2312	30	250	2	2	2 "	None	4.35
2323	30	250	2	2	2 "	Solid	4.51
2041	60	125	2	1	1 "	"	12.60
2042	60	125 or 250	2	2	2 "	None	13.50
2043	60	125-250	3	2	2 "	Solid	14.35
2151	100	125	2	1	1 "	Solid	21.75
2142	100	125 or 250	2	2	2 "	None	21.75
2143	100	125-250	3	2	2 "	Solid	23.45
4743	100	125-250	3	2	2 "	Solid	23.45
4943	400	125-250	3	2	2 "	None	101.00

POLYPHASE

2334	30	250	3	3	3	NEC	None	\$ 9.8
2034	60	250	3	3	3	"	"	17.4
2134	100	250	3	3	3	"	"	26.9
4734	200	250	3	3	3	"	"	49.7
4934	400	250	3	3	3	"	"	113.0

MAIN ENTRANCE SWITCHES

172	60	250	2	2	2	NEC	None	\$ 9.1
171	60	125-250	3	2	2	"	Solid	9.3
102	100	250	2	2	2	"	None	15.6
110	100	125-250	3	2	2	"	Solid	16.5

POLYPHASE

2330	30	250	3	3	3	NEC	None	\$ 9.1
2030	60	250	3	3	3	"	"	15.6
2130	100	250	3	3	3	"	"	25.1

INDUSTRIAL TYPE SWITCHES

250 Volts				Quick Make & Price			
Amps.	Poles	Blade	Fuses	Access. Fuses Number	Sealed Fuses Price	Fuses Number	Price
30	2	2	2	9532	\$13.65	8532	\$ 8.40
30	3	3	3	9533	15.50	8533	9.70
60	2	2	2	9532	14.85	8532	8.60
60	3	3	3	9533	18.55	8533	10.20
100	2	2	2	9512	25.00	8512	12.40
100	3	3	3	9513	28.80	8513	15.50

OUTDOOR METER SERVICE SWITCHES

30 Amp.	3 Pole	Solid Neutral	Outdoor or	Weatherproof	.....	\$15.1
60	3	"	"	"	.....	20.4
100	3	"	"	"	.....	41.2

Murray Switches

ENTRANCE SWITCHES

30 Amp. Number	Volts	Description	With End Wires
630	125	1 Blade—1 Plug Fuse S. N.	\$1.60
231-230	125-250	2 " —2 "	1.70
641-62	125	For 1 HP—250 V.—AC & DC Motors.	1.80
643	230	3 Blades 3 Cartridge Fuses	3.25
647	125-250	" " " " S. N.	2.50
830	125-250	" " " Sealed Fuses S. N.	2.65
831	125-250	" " " 2 Plug Sealed Fuses S. N.	2.80
Accessible Main Fuses With Branches Combined			
780-782	125-250	2 Plug Fuses 2-2 Wire Branches Without End Wires	\$5.80
781-783	125-250	" " " 4-2 " " "	\$9.50
784	125	" " " 1-3 " " "	0.60
785	125	" " " 2-2 " " "	7.30

ACCESSIBLE MAIN FUSE TYPE AA

					Without End Walls			
					Meter Test Type		Not-Meter Test Type	
Amps.	Poles	Fused for	Neutral		No.	Price	No.	Price
30	2	1 Plug	Fused		755	\$3.25	754	\$3.05
30	2	1 Cart.	"		738	4.20	740	3.60
30	2	2 Plug	"		748	3.70	752	3.35
30	2	2 Cart.	"		737	4.50	757	4.25
30	3	2 Plug	Solid		756	4.20	753	3.70
30	3	2 Cart.	"		742	4.45	758	4.05
130	2	1 Plug	Fused		775	3.25	774	3.05
130	2	2 Plug	Solid		776	4.30	779	3.70
130	3	2 Cart.	"		777	4.45	778	4.25
60	2	1 Cart.	Fused		760	14.20	773	15.05
60	2	2 Cart.	"		764	15.05	762	14.20
60	3	2 Cart.	Solid		765	15.95	763	15.05
100	2	2 Cart.	Fused		709	23.85	708	22.10
100	2	2 Cart.	"		718	23.85	716	23.00
100	3	2 Cart.	Solid		719	25.60	717	23.85

x—Made with cover to permit sealing fuses independent of main cover.

POLYPHASE ENTRANCE & SERVICE

Entrance	No.	Description	With End Walls	
Amps.			3 Wire	4 Wire
30		Three Legs Fused.....	\$11.00	\$11.60
60	760-9	Four Wire Solid Neutral.....	19.40	20.00
100	710-12	All 3 Pole 3 Phase.....	29.05	29.95
200	720-22		44.55	51.85
Service				
30		Three Legs Fused.....	\$11.00	\$15.00
60	761-8	Four Wire Solid Neutral.....	20.70	23.80
100	711-14	All 3 Pole 3 Phase.....	30.80	33.25
200	721-23		51.85	90.75

ENTRANCE SWITCH

Range and Lighting	125-250 Volt
No. 260 Two Meter Combination Range and Light Switch 60A. Range	
Service—30A. Light Service.....	\$7.80

"UNISAFTI"
(Universal Standardized Switches)

All 30 Amps.						
Number	Pole	Fuse	Neutral	Branches &	Fusing	Price
235B	2	Single		2-2-Wire	2 Fuses	\$3.25
236	2	"		4-2 "	2 "	4.30
237	3	Two	Solid	1-3 "	2 "	3.75
237	2	"	"	1-2 "	2 "	3.75
237	3	"	Solid	2-2 "	2 "	3.75
238	3	"	Solid	4-2 "	4 "	4.35
238	2	"	"	2-2 "	4 "	4.35

METER SERVICE SWITCHES

Fuses & Blades Dead		Sealed Fuses		Without End Walls		
Amp.	Volts	Description	No.	Price	No.	Price
30	125	For Plug Fuses	232	\$ 2.20	333	\$ 3.30
60	250	For Cart. Fuses	364	12.85	365	13.70
60	250	For Cart. Fuses	368	12.75		
Fuses Alive						
30	125	For Plug Fuses	330-1	\$ 2.65	333	\$ 3.30
30	250	For Cart. Fuses	130	2.65	133	3.30
60	250	" " "	360	8.45	361-3	8.90
100	250	" " "	310	15.05	313-4	15.90

SEALABLE MAIN FUSES

Polyphase—3 Wire			
	30 Amp.	60 Amp.	Without End Wall 100 Amp.
3 Pole-3 Blades-For Cart. Fuses 250V.	332 \$11.10	362 \$16.80	311 \$26.50

TYPE C-SWITCHES

Amps.	Description All Cart. Fuse	2 Pole		3 Pole		4 Pole	
		No.	Price	No.	Price	No.	Price
30		632	\$2.65	633	\$3.75	634	\$6.90
30	Solid Neutral 125-250	631	6.60	663	7.45	667	9.00
60		465	6.60	665	7.10	...	...
60	Solid Neutral 125-250	...	...	662	7.45	663B	7.80
60		611	10.50	613	12.80	610	19.50
100		507	10.50	615	11.60	614	19.50
100	Solid Neutral 125-250	...	...	612	12.80	613B	13.80
100		621	18.50	622	22.75	620	40.80
200		...	...	625	19.20	...	...
200	Solid Neutral 125-250	...	...	622	22.75	623B	23.75

END WALLS, PLATES & TROUGHS & ADAPTORS

	30	60	100
End Wall.....	Amp. \$	Amp. \$	Amp. \$
Shutter.....	.30	.55	1.00
Closure Plate.....	.15	.25	.30
Trough Cover & Adapting Slide.....	.30	.30	.30
Trough 2" 3 & 4".....	.15	.15	.15
" 6".....			.50
" 8".....			.75
" 10".....			1.00

S-Sundries

WOOD SCREWS—Flat Head

Size	Price Per Doz.	Size	Price Per Doz.	Size	Price Per Doz.
1/2" x 6 & Smaller.	\$.05	1 1/2" x 12....	\$.07	2 1/2" x 10....	\$.08
3/4" x 8.	.05	1 3/4" x 8....	.07	2 1/2" x 12....	.08
1" x 6.	.05	1 3/4" x 8....	.07	2 3/4" x 10....	.08
1 1/4" x 6.	.05	1 3/4" x 10....	.07	2 3/4" x 12....	.08
1 1/4" x 8.	.05	1 3/4" x 12....	.07	2 3/4" x 10....	.08
1 1/2" x 6.	.05	2" x 6....	.07	2 3/4" x 12....	.08
1 1/2" x 8.	.05	2" x 8....	.08	3" x 8....	.09
1 3/4" x 10.	.05	2" x 10....	.08	3" x 10....	.09
1 3/4" x 6.	.06	2 1/4" x 12....	.09	3" x 12....	.09
1 3/4" x 8.	.06	2 1/4" x 6....	.07	3" x 14....	.09
1 3/4" x 10.	.07	2 1/4" x 8....	.07		

NOTE.—For Round Head Wood Screws Add 30% to above prices.

NOTE—For Round Head Wood Screws Add 30% to above prices.

These prices apply only to the United States

Electrical Contracting, January, 1932

S-SUNDRIES

MACHINE SCREWS—Round or Flat Head

Size	Price per Dozen	Size	Price per Dozen
1/8 x 1 1/2	\$.03	10/24 x 1 1/2	\$.06
1/8 x 1 3/4	\$.05	10/24 x 1 3/4	\$.06
1/8 x 2	\$.05	10/24 x 2	\$.06
1/8 x 2 1/4	\$.05	10/24 x 2 1/4	\$.06
1/8 x 2 1/2	\$.05	10/24 x 2 1/2	\$.06
1/8 x 2 3/4	\$.05	10/24 x 2 3/4	\$.06
1/8 x 3	\$.05	10/24 x 3	\$.06
1/8 x 3 1/4	\$.05	10/24 x 3 1/4	\$.06
1/8 x 3 1/2	\$.05	10/24 x 3 1/2	\$.06
1/8 x 3 3/4	\$.05	10/24 x 3 3/4	\$.06
1/8 x 4	\$.05	10/24 x 4	\$.06

NOTE—For Machine Screws with Fillister Head add 25% to above prices.

LAG SCREWS

Square Heads or Coach Screws

Length	2"	2 1/2"	3"	3 1/2"	4"	4 1/2"	5"	6"
Black	\$.03	\$.03	\$.04	\$.04	\$.04	\$.04	\$.04	\$.05
Black	\$.03	\$.04	\$.04	\$.04	\$.05	\$.05	\$.05	\$.06
Black	\$.04	\$.04	\$.05	\$.05	\$.06	\$.06	\$.07	\$.07
Black	\$.05	\$.05	\$.06	\$.07	\$.07	\$.07	\$.08	\$.09
Galv.	\$.03	\$.03	\$.04	\$.04	\$.05	\$.05	\$.05	\$.06
Galv.	\$.04	\$.04	\$.04	\$.04	\$.05	\$.05	\$.05	\$.06
Galv.	\$.06	\$.06	\$.07	\$.07	\$.08	\$.08	\$.09	\$.10

STRAPS—CLIPS OR CLAMPS

For Pipe

Without Screws	Price Each	Without Screws	Price Each
Galvanized Straps, 2 Hole	\$.01	Galvanized Straps, 2 Hole	\$.02
(Per Pound \$.20) No. Straps per Lb.	45	(Per Pound \$.20) No. Straps per Lb.	12
Light Steel Straps, 1 Hole	\$.04	Light Steel Straps, 1 Hole	\$.05
Mall. Iron Clamps, 1 Hole	\$.04	Mall. Iron Clamps, 1 Hole	\$.05
P & S Conduit Clamps with Bolts	\$.10	P & S Conduit Clamps with Bolts	\$.15
Series 1400	\$.14	Series 1400	\$.20

SOLDER

Per Pound	40-60 Bar or Wire	50-60 Bar or Wire	Resin or Acid Core	Ribbon	Alumi-Flux
Per Ounce	\$.05	\$.05	\$.08	\$.07	\$.15

SOLDER PASTE

Make	2 oz. Cans	2 oz. Tubes	4 oz. Cans	Half Pound Cans	One Pound Cans
Allen	\$.25	\$.40	\$.50	\$.70	\$.85
Burnley	\$.25	\$.40	\$.50	\$.70	\$.85
Crescent	\$.25	\$.40	\$.50	\$.70	\$.85
G. E.	\$.25	\$.40	\$.50	\$.70	\$.85
Highland	\$.25	\$.40	\$.50	\$.70	\$.85
Nokorode	\$.25	\$.40	\$.50	\$.70	\$.85
Star	\$.25	\$.40	\$.50	\$.70	\$.85

SOLDERING SALTS

	1/2 Lb.	1 Lb.
Burnley	\$.40	\$.75
Yager	\$.40	\$.75
McGill Crescent	\$.40	\$.75
Nokorode	\$.40	\$.75
Allen	\$.40	\$.75

SOLDER STICKS

	Price
Burnley	\$.25
Samson	\$.20
Allen	\$.40
Crescent	\$.25
GE	\$.25
Star	\$.25

FIXTURE STUDS

	1/2	3/4
Four Prong Fixture Studs Less Bolts	\$.10	\$.15
Bolts Extra	\$.01	\$.01
No Bolt Fixture Studs	\$.10	\$.15

STAPLES

Staples Insulated Nails Per Dozen	\$.05	Per Box	\$.40
Leather Nail Heads Per Dozen	\$.05	of	\$.40
Milonite Insulated Nails Per Dozen	\$.05	100	\$.40

TAPE

FRICTION

	8-Ounce Roll	4-Ounce Roll	2-Ounce Roll	1-Ounce Roll	Per Foot
Adhere	\$.25	\$.15	\$.10	\$.05	\$.01
Amazon	\$.35	\$.20	\$.10	\$.05	\$.01
Bulldog	\$.40	\$.20	\$.10	\$.05	\$.01

Clifton	\$.35	\$.20	\$.10	\$.05	\$.01
Dutch Brand	\$.35	\$.20	\$.10	\$.05	\$.01
G. E. 301	\$.30	\$.20	\$.10	\$.05	\$.01
Grimshaw	1.00	\$.50	\$.25	\$.15	\$.05
Highest Firestone	\$.30	\$.15	\$.10	\$.05	\$.01
Holdfast	\$.25	\$.15	\$.10	\$.05	\$.01
Holdite U. S.	\$.30	\$.15	\$.10	\$.05	\$.01
Johns Manville Armature	\$.90	\$.45	\$.25	\$.15	\$.02
Johns Manville	\$.55	\$.30	\$.15	\$.10	\$.02
White	\$.70	\$.35	\$.20	\$.10	\$.02
Now \$5.	\$.25	\$.15	\$.10	\$.05	\$.01
Manon	\$.30	\$.15	\$.10	\$.05	\$.01
O. K.	\$.30	\$.15	\$.10	\$.05	\$.01
P. R. Splicing	\$.35	\$.20	\$.10	\$.05	\$.01
Security	\$.25	\$.15	\$.10	\$.05	\$.01
Slipknot	\$.30	\$.15	\$.10	\$.05	\$.01
Two Plex	\$.65	\$.35	\$.20	\$.10	\$.04
Vim Gray	\$.60	\$.30	\$.15	\$.10	\$.02

RUBBER

Akron Firestone	\$0.30	\$0.15	\$0.10	\$0.05	\$0.03
Amazon	\$.50	\$.25	\$.15	\$.10	\$.04
Dutch Brand	\$.30	\$.15	\$.10	\$.05	\$.03
G. E.	\$.30	\$.15	\$.10	\$.05	\$.03
Imperial	\$.30	\$.15	\$.10	\$.05	\$.03
Imperial	\$.75	\$.40	\$.20	\$.10	\$.04
Paragon	\$.85	\$.45	\$.25	\$.15	\$.04
P. R. Splicing	\$.30	\$.15	\$.10	\$.05	\$.03
Relio U. S.	\$.25	\$.15	\$.10	\$.05	\$.03
Security	\$.30	\$.15	\$.10	\$.05	\$.03
Two Plex	\$.65	\$.35	\$.20	\$.10	\$.04
U. S.	\$.25	\$.15	\$.10	\$.05	\$.03
USCO	\$.50	\$.25	\$.15	\$.10	\$.04

TELEPHONES

COUCH TELEPHONES

Vestibule Type

No. 74 Armored Cord Receiver Type	\$25.00
No. 74A Swing Arm Receiver Type	\$7.30
No. 74C Cordless Loud Speaker Type	\$0.75

Above prices are for telephones complete but do not include for any call buttons.

Add for buttons—Janitor Calling Buttons if fitted. \$.95

Add for Each Suite Calling Button. \$.95

SUITE TELEPHONES

Series 2800 to 2840 or 1000 to 40	Page 22 Bulletin No. 89 S. H. Couch Co.
Number of Buttons	0 1 2 3
Price Ea. Surface or Flush	\$11.40 \$11.40 \$12.45 \$13.60

TELEPHONE CABLES

Number of Conductors	Braided Type "B"	Lead Covered Type "L"
	Number Price per Foot	Number Price per Foot
12	B-12 \$1.14	L-12 \$1.14
16	B-16 \$1.14	L-16 \$1.14
21	B-21 \$1.14	L-21 \$1.14
25	B-25 \$1.14	L-25 \$1.14
31	B-31 \$1.14	L-31 \$1.14
37	B-37 \$1.14	L-37 \$1.14

EDWARDS TELEPHONES

Vestibule Type

No. 321 and 397 Armored Cord Receiver Type	\$25.00
No. 322 and 396 Cordless Loud Speaker	\$0.75

Above prices are for telephones complete but do not include any call buttons.

Add for each Call Button. \$0.95

Mail Box. 3.25

Apartment Telephones

No. 3322 and 3352 Surface Wall Type Watch Case Receiver	\$12.50
No. 3332 and 3362 " " " Long Hand	16.75
No. 3342 and 3372 Flush " " " Watch Case	12.50

Above prices are for telephones complete with two push buttons—Add \$1.10 for 3 Buttons.

STANLEY & PATTERSON TELEPHONES

Vestibule Type

No. 9-PE Armored Cord Receiver Type	\$25.00
No. 8-PVE Cordless Loud Speaker	\$0.75

Above prices are for telephones complete but do not include any buttons.

Add for each Call Button. \$.95

No. 12003—3 Gang Mail Box, for use with Vestibule Telephones. 12.50

Add for each additional Gang. 4.20

Apartment Telephones

No. 2524-PE Surface Wall Type with Watch Case Receiver	\$12.50
No. 1172-PE " " " Long " " "	16.75
No. 2530-PE Flush " " " Watch Case	12.50

Above prices are for Telephones complete with two push buttons.

TIME SWITCHES

GENERAL ELECTRIC TIME SWITCHES

TYPE T-8C—Sgle. Pole
15 Amp. Indoor Service

Type	Cat No.	115 V. Price	230 V. Price
T-8C1	34x979 to 984	\$22.00	\$23.00
T-8C2	34x985 to 990	23.00	24.00
T-8C3	34x991 to 996	23.00	23.00

TYPE T-9—Dble. Pole

	30 Amp. In or Outdoor Service	40.00	41.00
60 and 50 Cycle	10x637-40	40.00	41.00
40 and 25	10x641-44	40.00	41.00
Holiday Cutout Extra		4.00	4.00

These prices apply only to the United States

TYPE T-13 ELECTRICALLY OPERATED

TWO-CIRCUIT SWITCH				
With Plain Dial				
115	30	.....	3T13EA7 3T13EA9 3T13EA11	\$31.00
230	15	.....	3T13EA2 3T13EA4 3T13EA6	32.00
With Astronomic Dial				
115	30	.....	3T13EB7 3T13EB9 3T13EB11	46.00
230	15	.....	3T13EB2 3T13EB4 3T13EB6	47.00

Type	10 Amp.	20 Amp.	35 Amp.	50 Amp.
B Double Pole.....	\$36.00	\$39.00	\$42.00	\$50.00
C & D Double Pole.....	39.00	42.00	47.00	52.00
G Apt. Hall Light Control D. P.....	38.00		60.00	

Type	Wound Capacity	Description	Price
E	Elec. 60 Amp.		\$32.00
H	Hand 60 "	Double Pole.....	24.00
EW	Elec. 60 "	Same as Type E & H on a Mounting Plate in	42.00
HW	Hand 60 "	Weatherproof Box.....	34.00
EO	Elec. 60 "		38.00
HO	Hand 60 "	With Automatic Cutout for omitting opera-	30.00
EOW	Elec. 60 "	tion on Sunday or any days desired.....	48.00
HOW	Hand 60 "		40.00
ET	Elec. 60 "		35.00
HT	Hand 60 "	Equipped for Four Operations per day, Two	37.00
ETW	Elec. 60 "	"Ons" and Two "Offs" in 24 hours.....	45.00
HTW	Hand 60 "		37.00
ETO	Elec. 60 "	With automatic day cutout and four opera-	42.00
HTO	Hand 60 "	tions per day	34.00
EM	Elec. 30 Amp.		38.00
HM	Hand 30 "	Single Pole, Double Throw, for operating	30.00
EMW	Elec. 30 "	large open circuit switches.....	40.00
HMW	Hand 30 "		40.00
EC	Elec. 30 "		35.00
HC	Hand 30 "	Single Pole, with special contact for connect-	27.00
ECW	Elec. 30 "	ing automatic electric time motor.....	45.00
HCW	Hand 30 "		37.00

E—Electrically Wound W—In Weatherproof Box
M—Single Pole, DoubleThrow H—Hand Wound
Q—With Automatic Day Cutout T—For Four Operations per Day.

Type			10 A	15 A	20 A	30 A	40 A	50 A
A	Sgle. Pole	125 V.—A. C.		\$22.00				
B	Dbble.	250 V. A. C. or D. C.	\$25.00		\$28.00	\$30.00		\$35.00
SA	Sunday Cutout	125 V.—S. P.		26.00				
SB		250 V.—D. P.				40.00		
TC	Two Circuit	125 V.	30.00		33.00			
C	Sgle. Pole	115 V.A.C 50-60 Cy.		30.00				
K	Dbble.	115 V.A.C 50-60						50.00
TK	Two Circ.	110-250 V. 50-60	40.00		45.00			
D	Dbble. Pole	125-250 V. 50-60				45.00	45.00	
E	Sgle.	110 V. 50-60		50.00			65.00	
F	Dbble.	115 V. 50-60				65.00	65.00	
TF	Two Circ.	115 V. 50-60	55.00		60.00			

	10 Amp.	20 Amp.	30 Amp.	50 Amp.
Racine Type 1R-2R.....	\$19.50	\$23.00
Reliance Type 10-20-30-50.....	28.00	30.00	\$32.00	\$36.00
Reliance Type 18 Triple Pole.....		32.00
Apartment House Types A-B-C-D-E-F-G.....	30.00	30.00

Type	No. Poles	115V. AC	230V. AC	115V. DC	230V. DC			
		Throw Amp. Price	Throw Amp. Price	Throw Amp. Price	Throw Amp. Price			
TC* TM-11	Spile. 30	\$50.00	30	\$50.00	30	\$56.00	15	\$50.00
TC* TM-12	Dble. 30	\$33.00	30	\$33.00	30	\$9.00	15	\$62.00
TC* TM-21	Dble. 30	\$66.00	30	\$66.00	30	\$62.00	15	\$65.00
TC* TM-22*	Dble. 30/10	\$59.00	30/10	\$59.00	30/10	\$65.00	15/5	\$68.00
TM-31	Triple Spile. 5	\$62.00	5	\$62.00	5	\$71.00	5	\$71.00
TM-32	Dble. 5	\$65.00	5	\$65.00	5	\$71.00	5	\$71.00
Type	No. Poles	Throw	Amp.	Price	Throw	Amp.	Price	
Form V. W. 11	1	Spile.	40	\$25.00	40	\$25.00		
* V. W. 21	2		40	\$27.50	40	\$27.50		

No. Poles	Throw	Total Amp. Capacity		Indoor		Outdoor	
		Per Pole	Per Switch	Type	Price	Type	Price
1	Sgle	20	20	201	\$25.00	201W	\$35.00
2	"	20	40	402	30.00	402W	40.00
3	"	20	60	603	35.00	603W	45.00
4	"	20	80	804	40.00	804W	50.00
6	"	20	120	1205	50.00	1205W	60.00
12	Dbble	20	40	404	40.00	404W	50.00

TORK

Synchronous and Large A. C. Types				Hand Wound and Large D. C. Types			
Amp. Pole	Indoor	Outdoor		Amp. Pole	Indoor	Outdoor	
20	1	\$121 \$30.00	221	1	\$38.00		
20	2	122 35.00	222	2	43.00		
20	3	123 40.00	223	3	48.00		
40	1	141 35.00	241	1	43.00		
40	2	142 45.00	242	2	53.00		
60	1	161 45.00	261	1	53.00		
60	2	8062 75.00	Omitting	60	2	7062 97.00	Omitting
125	2	8122 135.00	Device	125	2	7122 142.00	Device
200	2	8202 160.00	Included	200	2	7202 172.00	Included
20 1 & 1	1	1200 40.00	Apartment	20 1 & 1	1	1101 32.00	Apartment
20 2 & 2	2	1222 50.00	Apartment	20 2 & 2	2	1222 50.00	Apartment
40 1 & 1	1	1411 50.00	Types	40 1 & 1	1	1411 42.00	Types
20 1 & 1	1	1111 40.00	Mom. Cont.	20 1 & 1	1	1111 32.00	Mom. Cont.
20 1 & 1	1	1171 40.00	Motor Cont.	20 1 & 1	1	1171 32.00	Motor Cont.

On and Off Twice-a-Day \$2.00 Extra—3 to 16 Times Per Day \$5.00 Extra.

Type A Model	15-S & 3M	Switches & Plates	(Regular)	\$2.50
"A"	" "	" "	(Automatic Return)	2.75
"B"	" "	" "	(2 Terminal Type)	4.25
"B"	" "	" "	(3	4.50

BELL & TOY TRANSFORMERS

Name	Style	Watts	Secondary		50 to 133		25 to 40	
			Volts	Cycle	No.	Price	No.	Price
DONGAN	Midgest			8	301	\$1.00	301	\$1.30
	Tri-Volt			6-9-14	281	1.30	281	1.55
	Ace			8	280	1.30	280	1.55
	M-26			8	1211	1.40	1211	1.75
	T-26			6-9-14	206	1.40	206	1.75
	Heavy Duty	30	6-12-18	401	4.00	401	5.00	
	"	50	6-14-20	455	5.00	455	6.25	
	"	75	6-14-20	472	7.50	472	9.35	
	"	100	6-12-18-24	304	9.00	304	11.25	
	"	125	6-12-18-24	351	10.00	351	12.50	
ED- WARDS	"	150	6-12-18-24	357	11.00	357	13.75	
	Champion Toy	100	2 to 20	880	5.85	880	7.25	
	Jupiter	60	2 to 20	821	4.10	821	5.10	
	Master	150	1 to 24	850	8.25	850	10.30	
	Steel Clad Bell	25	Single	86	\$ 1.25	86	1.45	
	"	25	Three	86T	1.55	86T	1.75	
	Porcelain Bell	25	Single	87	1.55	87	1.75	
	Out. Box Bell	25	"	86E	1.55	86E	1.75	
	Heavy Duty	50	8-16-24	88	4.25	88	4.65	
	"	75	"	89	6.40	89	7.00	
G. E.	"	100	"	90	7.40	90	8.15	
	Toy	50	3 to 18	870	3.50	870	4.20	
	"	75	3 to 24	871	5.85	871	7.00	
	"	100	2 to 30	872	8.75	872	10.50	
	Bell Residence	12	12 Volt	2332	1.25	102340	1.45	
	Box Type	12	"	2488	1.00	2490	1.75	
	Heavy Duty	50	6-16-24	2333	5.40	2339	7.70	
	"	100	10-20-30	2334	7.70	2340	11.20	
	Wizard	5	10 Volt	230-101	1.00	230-102	1.15	
	Nacode	5	10 Volt	230-111	1.40	230-112	1.65	
JEF- FERSON	Tri-Volt	5	6 to 18V.	230-121	1.40	230-132	1.65	
	Porcelain	5	10 Volt	230-131	1.40	230-132	1.65	
	Little Jeff Toy	50	5-14-23	535-101	3.65	535-102	4.40	
	Midgest Toy	75	5-14-22	535-121	4.45	535-122	5.40	
	Model 2 Toy	100	5-14-22	535-131	6.75	535-132	8.50	
	Model 3 Toy	150	1-30	535-141	8.05			
	Heavy Duty	50	4 to 24	231-101	8.10	231-102	6.35	
	"	100	4 to 24	231-111	8.90	231-112	11.00	
	"	150	6 to 26	231-131	10.00	231-132	13.50	
	"	250	6 to 24	231-141	21.00	231-143	26.40	
KIL- LARK	Blue Bell	10	8	6166	1.00			
	Tri-Volt	20	6 to 16	6165	1.40			
	Grey Bell on Cov.	10	8	7166S	R. 40			
	Porc. White Bell	10	8	4166	1.40			
	Black Bell H. D.	50	6 to 20	816-50	5.00			
	"	100	6 to 24	816-100	8.00			
	"	250	6 to 24	816-250	24.25			
	"	500	5 to 24	816-500	28.85			
	Box " In Box	10	8	9166 D	\$2.30			
	RICH- ARDS	Mold. Single	25	10 Volts	221	1.40		
Mold. 3 Circuit		25	6 to 18V.	222	1.65			
Steel Sals. Cir.		25	10 Volts	225	1.25	235	1.35	
Steel 3 Circuit		25	6 to 18V.	226	1.40			
Cor. Ty's Spie. Cir.		25	10 Volts	227	1.40	237	1.85	
Cor. Type 3 Cir.		25	6 to 18V.	228	1.65			
Porcelain Clad		25	Single	300D1	1.65	301G1	2.10	
"		25	6-9-15	203D1	2.10	204G1	2.55	
Steel		15	Single	205S	1.25	206SG	1.40	
"		15	6-9-15	207S	1.45	208SG	1.75	
STAN- DARD	Heavy Duty Porc.	50	6-12-18	200HD1	6.45	210HE1	7.20	
	"	100	8-16-24	212EH2	7.75	213EH2	10.30	
	Steel Clad "A"	50	6-12-18-24	300A	6.20	301A	6.75	
	"	100	6-12-18-24	302B	9.25	303B	10.75	
	"	200	6-12-18-24	304C	17.50	305C	20.65	
	"	300	6-12-18-24	306E	21.45	307E	25.75	
	"	400	6-12-18-24	308F	28.90	309F	36.70	
	"	600	6-12-18-24					
	TB H'vy Duty	50	8-16-24	501	4.25	502	4.75	
	TB H'vy Duty	75	8-16-24	751	6.40	752	7.00	
PATTER- SON	TB H'vy Duty	100	8-16-24	1001	7.40	1002	8.15	
	TB H'vy Duty	150	8-16-24	1501	9.10	1502	10.10	

NOTE: For 220 Volt Transformers add 20% to above prices

Electrical Contracting, January, 1932

WIRES

NEW CODE RUBBER COVERED WIRES

Special Price on No. 14 S.B. Wire

	Per Foot		Per Foot
In less than Coil Lots.....	\$.01½		
In Coil Lots.....	.03½		
Other Sizes			
Fixture Wire Light.....	\$.15	No. 18	\$.35
Heavy.....	.25	No. 14	.01
Solid Single Braid.....	.01	See Above	
Double.....	.01½		
Stranded Sgl. Braid.....	.01		
Double.....	.01½		
Duplex Single Braid.....	.02½		
Double.....	.03½		
Other Sizes			
Fixture Wire Light.....		No. 12	
Heavy.....		No. 10	
Solid Single Braid.....	\$.01	No. 8	\$.03½
Double.....	.01½		.04
Stranded Sgl. Braid.....	.01½		.04
Double.....	.02½		.05
Duplex Single Braid.....	.03		.05
Double.....	.04		.06

LARGER SIZES DOUBLE BRAID STRANDED

Size	Price Per Foot	Size	Price Per Foot
No. 8 D. B.....	\$.03	No. 0.....	\$.14
No. 6 D. B.....	.05	No. 00.....	.16
No. 4 D. B.....	.06	No. 000.....	.20
No. 3 D. B.....	.07	No. 0000.....	.24
No. 2 D. B.....	.08	250,000.....	.20
No. 1 D. B.....	.12		

CIRCULAR MILL CABLE

Size	Price Per Foot	Size	Price Per Foot
300,000 C. M.....	\$.33	700,000 C. M.....	\$.73
350,000 C. M.....	.38	750,000 C. M.....	.77
400,000 C. M.....	.42	800,000 C. M.....	.82
450,000 C. M.....	.47	900,000 C. M.....	.92
500,000 C. M.....	.52	1,000,000 C. M.....	1.00
600,000 C. M.....	.54		
Additions to Code Wire for 25% (Intermediate Grade) and 30% Wire.			
For Intermediate or 25% Wire			
From No. 14 to No. 10.....	8%	For 30% Wire	20%
From No. 8 to 4.....	6%		10%
From 3 to 4/0.....	4%		7%
From 250,000 to 1,000,000 C.M.....	2%		5%

WEATHERPROOF WIRE

Triple Braid

	No. 18	No. 16	No. 14	No. 12	No. 10	No. 8	No. 6
Per Pound Solid.....	\$.55	\$.50	\$.40	\$.38	\$.35	\$.34	\$.32
" Stranded.....	.45	.41	.37	.35	.34	.32	.30
Per Foot Solid.....	.01	.01½	.02	.02½	.03	.04	.04
" Stranded.....	.02½	.03	.03½	.04	.04	.04	.04
Number Feet Per Pound.....	70	80	40	30	20	13	8
EXTRAS—For slow burning W. P. Wire—Per Pound Extra.....							
For Twisted Pair W. P. Wire—Per Pound Extra.....							.03
For Double Braid W. P. Wire—Per Pound Extra.....							.01
For Medium Hard Drawn—Per Pound Extra.....							.00½
For Armored Cables See Page PL-9.							

ANNUNCIATOR—TELEPHONE WIRE, ETC.

	No. 18	No. 16	No. 14	No. 12	No. 10	No. 8	No. 6
Fixture Wire Solid.....							
Light 1/4" Per Foot.....							
Heavy 1/4" " ".....	.01	.01½					
Stranded Light 1/4" " ".....	.01	.01½					
Heavy 1/4" " ".....	.01½	.01½					
Annunciator Wire							
Single Per Foot.....	\$.70	\$.60	\$.56				
" Per Pound.....	.00½	.00½	.01				
Twisted or Duplex Per Foot.....	.65	.64	.62				
" Per Pound.....	.01	.01½	.02				
Approximate feet per pound Single Cond. Annunciator Wire 158 104 68							
Office & Damp Proof Wire							
Single Per Foot.....	.70	.68	.64				
" Per Pound.....	.01	.01½	.02				
Twisted or Duplex Per Foot.....	.75	.71	.68				
" Per Pound.....	.02	.02	.04				
"Deltabeston" or similar							
Single Stranded Black or White Per Foot.....	.02½	.03	.03½	\$.04			
Single Stranded Colored Per Foot.....	.03	.03½	.04	.04½	.05½		
Single Glazed Cotton Per Foot.....	.03	.03½	.04½	.05½			
Single Artificial Silk Per Foot.....	.04	.04	.05				
Duplex Glazed Cotton Per Foot.....	.06	.07	.09				
Duplex Artificial Silk Per Foot.....	.07	.08	.09				
Twisted Pair Glazed Cotton Per Foot.....	.07	.08	.09				
Twisted Pair Artificial Silk Per Foot.....	.07	.08	.09				
Thermostat Wire No. 18—3 Conductor Solid—Per Ft.....							
Asbestos Range Wire							
Description							
No. 18 No. 16 No. 14 No. 12 No. 10 No. 8							
Asbestos Range Wire or Switch Board							
Wire Single Solid—Per Foot.....	\$.07	.08	.09	.10	.12	.14	

TELEPHONE WIRES

Inside & Outside Size Ins.	Description	Price Per Ft.
19 3/32" Inside 2 Cond Twisted Pr.....		\$.03
19 3/32" " 3 " ".....		.04
22 7/64" " 2 " ".....	Flameproof.....	.04
18 7/64" Outside 2 " ".....	Sat. Erd. Bridle W.....	.03
14 5/32" " 2 " ".....		.05
14 5/32" " 2 " ".....	Copperweld-Drop W.....	.05
For price of single conductor use one-half of 2 Cond. price.		

GALVANIZED TELEPHONE WIRE

Size BWG	No. 4	No. 6	No. 8	No. 10	No. 12	No. 14
EBB Extra Best Per Pound.....	\$.12	\$.12	\$.12	\$.12	\$.12	\$.12
B. B. Best Best " ".....	.11	.11	.11	.11	.11	.11
Steel " ".....	.10	.10	.10	.10	.10	.10
Weight Per 1000 Feet.....	153	112	74	49	32	19
Weight Per Mile.....	811	560	390	258	170	99

WIRE, MAGNET

Price Per Pound

Size	Single Cotton	Double Cotton	Single Silk	Double Silk	Plain Enamel	Enamel- ed Single Cotton	Enamel- ed Double Cotton
8	\$.31	\$.33			\$.30	\$.34	\$.36
10	.32	.35			.31	.35	.38
12	.33	.36			.32	.37	.40
14	.35	.40			.33	.39	.43
16	.37	.43	\$.62	\$.77	.35	.41	.47
18	.41	.50	.68	.87	.37	.47	.55
20	.45	.56	.76	1.00	.40	.54	.64
22	.54	.67	.82	1.10	.42	.58	.72
24	.57	.76	.93	1.16	.45	.67	.87
26	.61	.83	1.06	1.30	.48	.80	1.04
28	.71	1.12	1.26	1.60	.51	.95	1.21
30	.88	1.21	1.35	2.27	.54	1.16	1.47
32	1.04	1.35	1.78	3.10	.61	1.40	1.96
34	1.30	2.12	2.80	4.75	.71	1.80	2.97
36	1.95	2.88	3.80	7.18	.82	2.45	3.65
38	4.49	6.85	5.10	10.15	.88	4.49	
40					1.38		

NOTE: For odd sizes use half the increase of next larger size.
For 1/4 lb. lots use one third of above prices.
For one ounce lots use one tenth of above prices.

Price Per 100 Feet

Size	Single Cotton	Double Cotton	Single Silk	Double Silk	Plain Enamel	Enamel- ed Single Cotton	Enamel- ed Double Cotton
8	\$1.80	\$2.00			\$3.25	\$3.50	\$3.75
10	1.20	1.30			1.60	1.75	2.00
12	.75	.80			1.00	1.25	1.50
14	.60	.70			.75	1.00	1.25
16	.45	.55	\$0.70	.85	.55	.85	.75
18	.30	.40	.40	.45	.30	.35	.50
20	.25	.35	.35	.40	.25	.30	.45
22	.15	.25	.20	.30	.20	.25	.35
24	.10	.20	.15	.20	.10	.15	.25
26	.10	.20	.15	.20	.09	.13	.25
28	.08	.12	.10	.15	.07	.10	.18
30	.08	.12	.10	.15	.07	.10	.18
32	.06	.10	.08	.12	.05	.08	.14
34	.06	.10	.08	.12	.05	.08	.14
36	.05	.08	.06	.10	.04	.06	.08
38	.05	.08	.06	.10	.04	.06	.08
40					.04	.06	.08

Note: Prices per 100 feet are higher than per pound rate to cover cost of measuring and should be used only for small lot sales.

LEAD & RUBBER COVERED WIRE AND CABLE

Size	Single Conductor	Double Conductor	Three (3) Conductor
No. 12 Price Per Foot.....	\$.03	\$.04	\$.05
No. 10 " ".....	.04	.05	.07
No. 8 " ".....	.05	.06	.08
No. 6 " ".....	.06	.07	.10
No. 4 " ".....	.07	.08	.12
No. 3 " ".....	.08	.10	.15
No. 2 " ".....	.10	.12	.18
No. 1 " ".....	.12	.15	.24
No. 1/0 " ".....	.14	.18	.32
No. 2/0 " ".....	.15	.20	.35
No. 3/0 " ".....	.18	.25	.45
No. 4/0 " ".....	.20	.30	.55
250,000 C. M. Cable.....	.48		
300,000 C. M. ".....	.54		
350,000 C. M. ".....	.60		
400,000 C. M. ".....	.66		
500,000 C. M. ".....	.77		
600,000 C. M. ".....	1.00		
700,000 C. M. Cable.....	1.10		
750,000 C. M. ".....	1.16		
800,000 C. M. ".....	1.20		
900,000 C. M. ".....	1.32		
1,000,000 C. M. ".....	1.43		

NOTE: Above prices are based on following quantities:
No. 14 to No. 8 Less than 100 ft. No. 6 and larger less than 50 ft.

PARKWAY CABLES

Size	Steel Taped	Non-Metallic
No. 14 per ft.....	2 Cond. \$.33	3 Cond. \$.22
No. 12 " ".....	2 Cond. \$.35	3 Cond. \$.24
No. 10 " ".....	2 Cond. \$.38	3 Cond. \$.27
No. 8 " ".....	2 Cond. \$.43	3 Cond. \$.31
No. 6 " ".....	2 Cond. \$.55	3 Cond. \$.37
No. 4 " ".....	2 Cond. \$.68	3 Cond. \$.50
No. 3 " ".....	2 Cond. \$.92	3 Cond. \$.66
No. 2 " ".....	2 Cond. \$ 1.25	3 Cond. \$.80
No. 1 " ".....	2 Cond. \$ 1.50	3 Cond. \$ 1.00
No. 0 " ".....	2 Cond. \$ 2.10	3 Cond. \$ 1.80

NOTE: Prices on Parkway Cables are based on Trade costs in quantities of less than 100 Feet. Larger quantities take lower prices. Consult your jobber.

WAY BACK WHEN . . .

1914



CARBONATORS
SMALL PUMPS
REFRIGERATORS
OIL BURNERS

1/6 Horse Power Century Type RS Repulsion Start Induction Single Phase 60 Cycle, 1750 R. P. M. Motor. Built in standard horse power ratings from 1/8 to 40 horse power.

In 1914 . . . when refrigerators were first being developed requiring a different motor than was then in common use . . . When manufacturers of carbonators and some types of small pumps were commencing to feel the need of a motor more suited to their requirements . . . When Central Stations were bothered with high starting current . . . Century Electric Company designed its famous M-frame Type RS Repulsion Start Induction Brush-lifting, Single Phase Motor.

It was this motor that played such an important part in developing and stabilizing the electric refrigerator, oil burner and house pump business. It helped popularize their use because its high starting torque and low starting current met every severe service and safety requirement of these and similar hard-to-start apparatus in domestic use.

Today this motor, unchanged in fundamentals, is giving better service than ever . . . Its positive reliability has been amply demonstrated in many hundred thousands of installations in all classes of service in all parts of the world. . . . "They Keep a-Running" . . . Ask anybody who KNOWS motors! Century Electric Company, 1806 Pine Street, St. Louis, Mo., U. S. A.

Century
MOTORS

For More Than 28 Years at St. Louis
40 U. S. and Canadian Stock Points and More Than 75 Outside Thereof

Single Phase, Three Phase and Direct Current Motors — Motor Generator Sets — Rotary Converters — Fans and Ventilator

(Continued from page 30)

manufacturers and jobbers refused to favor industrial plants with discounts as large or larger than the average contractor is able to secure.

Yet the supplies and equipment would be in demand and purchased through contractor and dealer channels through which they should pass.

This procedure would enable the contractor group to know when and where materials and equipment are going and consequently where labor will be required for their installation.

It would be easier to hurdle the next obstacle, the plant electrician.

There is much in your article for the contractor to put into action, but the 25 reasons, and particularly the summary, are so stated that the writer begs leave to suggest that our industry would secure immeasurably greater benefit if they were broadcast through organs reaching industrial executives in general, with due recognition of course to ELECTRICAL CONTRACTING.

H. MARSHALL SMITH,
President,

S. Edw. Eaton & Co., Inc.
New York, N. Y.

LET'S MAKE ELECTRICITY FREE

Editor,

ELECTRICAL CONTRACTING:

I was reading your issue of recent date one evening after a hard day's work. The weather was cold and blustering, but it was warm and cozy by the fireplace. Suddenly a stranger was at my side who invited me, or more correctly, ordered me, to go out with him. With visions of being put "on the spot," I went with him, and soon found myself at a gathering of some kind. My escort, in answer to my question, said it was "The Order of Alen Counter-irritants." My blank expression must have shown that the name was new to me, so he said, "The members were interested in making the world safe for electricity." When I said thoughtfully, "Oh, yeh—Hell bangers," I was met with a scowl.

However, after listening a while, a tall, lanky individual got up and said, "Mr. President, I was reading in the issue of December of the ELECTRICAL CONTRACTING, where a Mr. H. S. Bennion stated in effect that electric work was being done too good, and

These watches look equally dependable, but ...



... their true value is hidden. Actual service alone can reveal the better watch ... there is no other practical way.

YET many buyers of electrical products who would spend hours selecting a good time piece, put all Friction Tape in one class. They do not know that there is just as much difference in tape as in watches. You will agree when you have tested and tried that "Extra Service" product, **DUTCH BRAND** Friction Tape.

By "Extra Service" is meant greater adhesiveness, longer life, unusual insulating qualities that resist upwards of 2200 volts, clean cut, strong, easy unrolling tape that is good to the very end of the roll.

Satisfy yourself about good tape by just attaching this ad to your letterhead, mailing to us and securing a full size roll free, for testing.

DUTCH BRAND is the four times impregnated tape that big industries use. It is carried by jobbers everywhere.

Make extra profits by selling as well as using **DUTCH BRAND** Friction Tape. Comes in 4 sizes, Nos. 1, 2, 4 and 8, packed in effective and attractive counter display cartons.

VAN CLEEF BROS. Established 1910

Manufacturers Friction and Rubber Tape and Soldering Paste
Woodlawn Avenue, 77th to 78th Streets, Chicago, U. S. A.



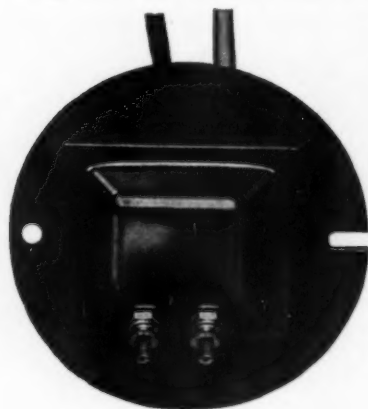
DUTCH BRAND
Rubber Insulating Tape
Fuses instantly without heat. Molds into one solid piece, replacing the original insulation. Resists over 22,000 volts.



DUTCH BRAND
Soldering Paste
A scientific mixture. Cleans as it works. Holds solder fast. Less paste required per job.

DUTCH BRAND FRICTION TAPE

Splice two wires,
Tighten two screws—

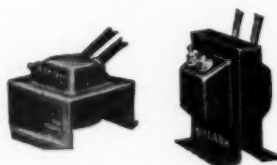


PRESTO!
the
**KILLARK
GREYBELL
TRANSFORMER**
is installed

Rugged brother to the famous "BlueBell," the Killark *Greybell* Transformer for operating bells, buzzers, annunciators, etc., is attached to a plate which serves as a cover for a 3 $\frac{1}{4}$ " or 4" outlet box. It makes a most economical and satisfactory transformer installation where wires are carried in rigid conduit. Same sturdy interior construction as the reliable "BlueBell"—same unconditional guarantee. Listed as standard by the Underwriters' Laboratories. You definitely sidestep transformer grief when you insist on Killarks. Your jobber has them.



A Large Family



"BlueBell" and "Greybell" are only two items of the Killark line of bell and buzzer transformers, which includes a type for every purpose, from small residence service to powering the intricate signal systems wherever alternating current is used. Write for details.

KILLARK ELECTRIC MFG. COMPANY
3940 Easton Ave. St. Louis, Mo.

that we should do our work more like the telephone companies do. It seems to me that the matter of safety was entirely overlooked." Just then another man jumped up who shouted: "I read the article, and I think Mr. Bennion is right. The consumer is getting too much now for the prices we get for our work, and we should be allowed to use bare wire stapled on walls, as this will be cheaper, and we can make more money."

More individuals got up with all kinds of suggestions, and things got so that several would try to talk at once. One kept standing, but he had not said a word during the heated discussion, but when the chairman had quieted the gathering he said, "Mr. Rushin, you have the floor." Mr. Rushin therefore, proceeded as follows: "Brethren, Mr. Bennion's idea is to have more electricity used, but he approaches the subject from the wrong angle. What is the principal obstacle to the more free use of electricity? It is the cost of the electricity itself. Electricity should be free, as air, the highways, sewer systems, etc. Electric work has to be well done, as there is a decided fire and life hazard if improperly installed, as we all know. We therefore, should get back of a movement for the people to install and operate their own plants, paying for it by issuing bonds. The rich will pay for the bonds by taxes.

"By furnishing free electricity every electric contractor will have all the work he can do, the factories will be busy turning out wiring supplies, toasters, flat irons—"

Just then there seemed to be an earthquake, and I heard a gentle voice, saying, "Billy, it's your bed time."

A CONTRACTOR FROM NEVADA.

RANGE SELLING IN BOSTON AREA
Editor,

ELECTRICAL CONTRACTING:

November's edition of **ELECTRICAL CONTRACTING** contained an article headed "Beware." This article refers to electric stove sales in the Boston area and is very misleading.

It states that the lighting companies tried for a period to sell ranges under list and that during this period the range sales suffered tremendously.

Some five or six years ago this
(Continued on page 89)

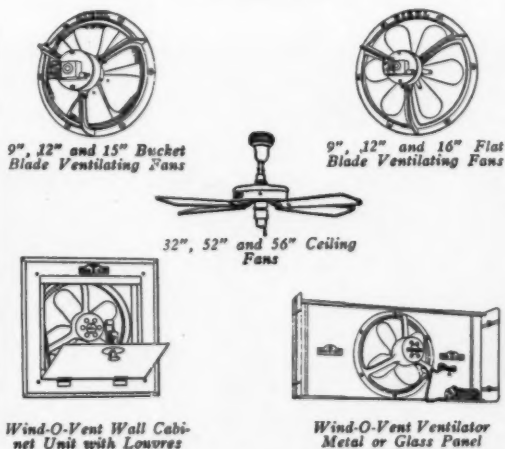


Diehl exhaust fan installation
in a small industrial plant.



... this field offers amazing
sales possibilities for exhaust fans

And here are Diehl Fans for your
other markets—



Industrial plants of all types and sizes, making change-overs in keeping with modernization campaigns, need adequate ventilation as well as ample lighting.

Here is a wide-open market for electrical contractors. With the complete Diehl line, including ventilating fans from 9 inches to 48 inches, ventilation jobs may be handled most effectively and economically.

For complete information consult your wholesaler's salesman. The new 1932 Diehl catalog, providing data on Diehl fans for various types of ventilating jobs is ready. Write us direct for your copy.

DIEHL MANUFACTURING COMPANY
Electrical Division of THE SINGER MANUFACTURING CO.
ELIZABETHPORT, N. J.

Atlanta Boston Chicago Columbus Dallas New York Philadelphia St. Louis

DIEHL fans

CONTRACTING NEWS

INFORMATION OF INTEREST TO ELECTRICAL CONTRACTORS
CONSISTING OF ITEMS OF NEWS, SHORT ARTICLES, PRACTICAL
IDEAS, ETC., OUR READERS ARE INVITED TO CONTRIBUTE TO
THIS DEPARTMENT

VERMONT ELECTRAGISTS WORK- ING FOR NEW STATE LAW

The Electragists' Chapters throughout Vermont are combining their efforts to secure state legislation this year prescribing that all electrical work and materials be in accordance with the requirements of the National Electrical Code.

According to a report from T. W. Matthewson, secretary of the Burlington chapter, the Electragists have repeatedly sought for such legislation, but have not been successful in persuading their local rep-

resentatives in the legislature of the necessity for such legislation. More success is expected from the combined efforts of all the chapters.

NO CODE COMMITTEE SPRING MEETING

A. R. Small, chairman, Electrical Committee, N.F.P.A., has announced that the usual annual Spring meeting of the committee will not be held this year because of insufficient amount of business. In all probability the next meeting of the committee will be held in February, 1933.

THREE-YEAR HOME RELIGHTING PROGRAM

Believing that the home lighting market can be sold if the electrical industry is to take advantage of the potential opportunities which it offers, the Domestic Lighting Committee of the Commercial National Section, N.E.L.A., has developed a three-year home relighting program.

Cooperation has been assured on this program from the Society for Electrical Development, the Illuminating Engineering Society, Mazda lamp manufacturers, fixture manufacturers, electric equipment manufacturers and wholesalers, electrical leagues, and the Association of Electragists, Int.

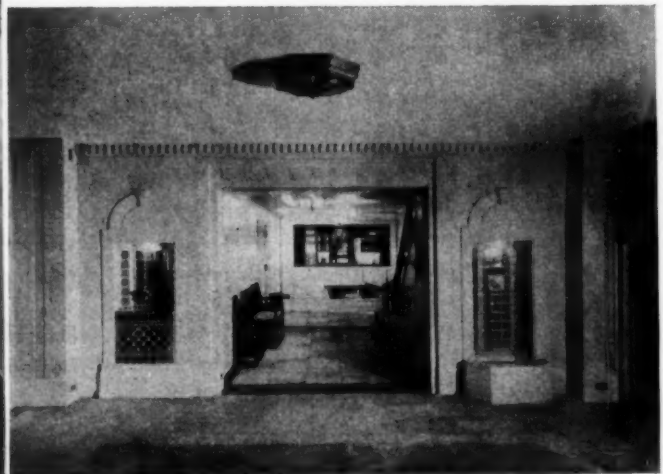
INDUSTRIAL MODERNIZATION FINANCING PLAN

A plan for financing electrical modernization of factories, together with a cooperative maintenance contract with a certificate of guarantee of responsibility is being worked out by the Electrical Guild of North America.

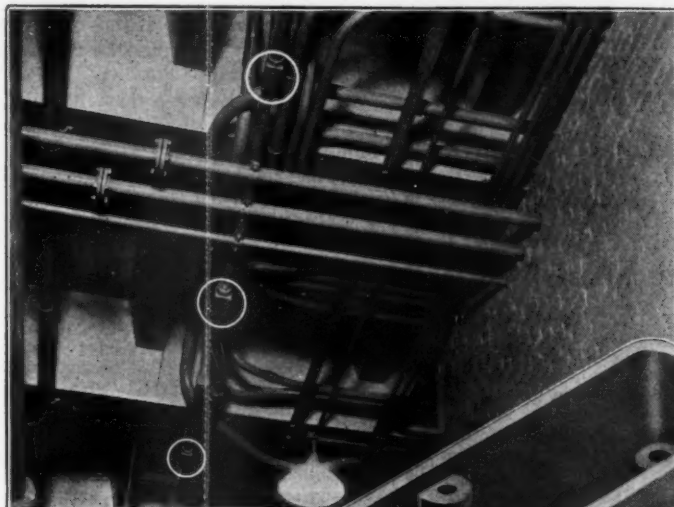
The plan provides for placing in the hands of guild members financial assistance through the Commercial



PHILADELPHIA ASSOCIATION OPENS
LIGHTING EXHIBIT

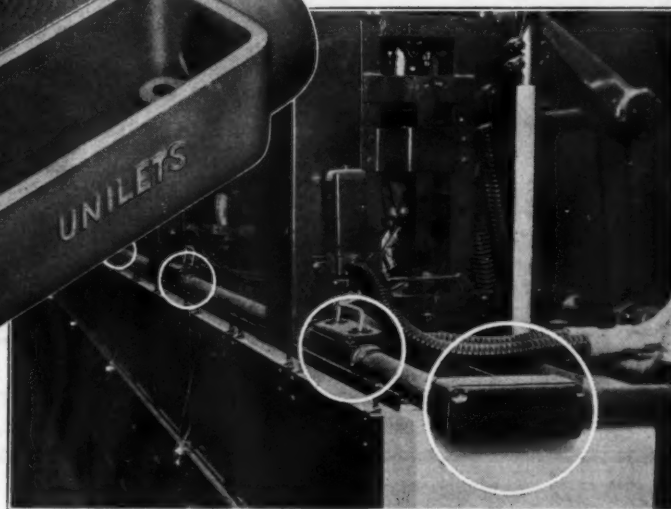


THE new headquarters and lighting exhibit of The Electrical Association of Philadelphia, were formally opened on December 10, 1931. A dinner commemorating the event was held at the Bellevue-Stratford Hotel, which was attended by 1,000 representatives and leaders in the electrical industry. At this dinner a brochure describing the new headquarters and lighting exhibit was distributed to the guests. The lighting exhibit has a modern foyer, to the left of which is a miniature street scene. The main corridor leads from the street scene into an exterior court. Opening onto the court from its several sides are entrances to the store, to a dwelling, to an office building and the demonstration room. An industrial exhibit is also included where the most advanced types of shop and industrial illumination are exhibited. The association headquarters comprise of a main corridor, the dining room, the conference room, managing director's office and the kitchen. Shown above is the main corridor of the association headquarters and exhibit corridor from the court.



Long Wear Long Life

With Appleton Threaded Unilets



Up in the Northwest, an interesting electrical installation has recently been made in the steam room of a leading public service company in which Appleton Threaded Malleable Unilets were used throughout.

It was an important requirement in this installation that long life be assured. The cadmium finish of Appleton Threaded Malleable Unilets resists rust and corrosion, while the malleable iron gives greater strength, yet they are lighter in weight. Write for further information.

SOLD THROUGH JOBBERS

APPLETON ELECTRIC COMPANY

1704 Wellington Ave., Chicago, U. S. A.

New York—150 Varick St. San Francisco—655 Minna St. Los Angeles—340 Azusa St.

Manufacturers of Appleton Constant Duty and Portable Type Reelites

APPLETON

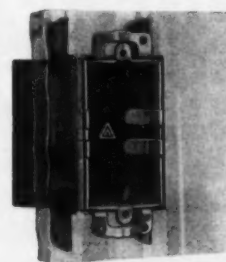
Threaded Malleable

STANDARD FOR BETTER WIRING

UNILETS

Reg. U. S. Pat. Off.

A New Appleton Product

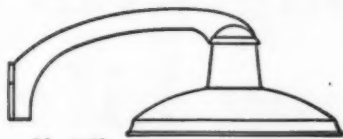


"E-Z-In" Switch Box Supports solve the problem of mounting switch boxes to Beaver board, Sheetrock, Metal Laths, etc. Equally suitable for old house wiring using lath and plaster. It will take standard switch boxes of any number of gangs. Switch box is securely fastened in place in one-half minute after opening is made. Makes a positive and rigid installation and saves time and labor. Illustration shows Appleton Switch Box as installed in wall board with "E-Z-In" Switch Box Supports.

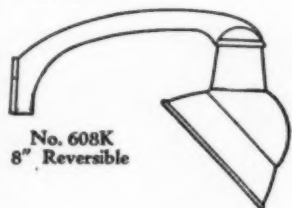
Q-D Bracket-Lites

*The Universal Unit for
Area Lighting*

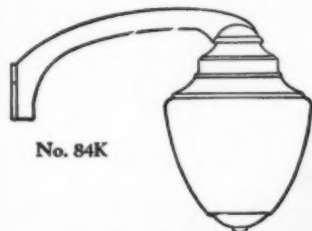
**Commercial
Residential
Rural**



No. 12K
12" and 14"
Shallow Bowl
or Dome.



No. 608K
8" Reversible



No. 84K

This adaptable unit, the latest output of Quad engineering skill, is good to look at, low in price, quick in sales.

One-piece illuminium casting replaces assembly of Flange, Stem and Socket fittings.

All styles of Q-D reflectors and Q-D globe holders are interchangeable on this bracket without disturbing connections.

Write today for descriptive folder.

**QUADRANGLE
MANUFACTURING CO.**
30 So. Peoria St. Chicago, Ill.



Credit Company of Baltimore without any outlay of capital on the part of the contractors.

The Guild believes that this plan will accomplish the following for Guild members:

1. It helps to bring them and their customer together.
2. It permits Guild members to concentrate on their prospects and sales, relieving them of the duties of a banker to the customer desiring modernization on installment basis.
3. Commercial Credit is prepared to finance modernization for Guild members to responsible and well managed industrial plants for amounts from \$300.00 to \$200,000.00.
4. By using Commercial Credit Company's service the member's own banking lines are not tied up with long term obligations thus permitting the use of bank credit for current requirements.
5. It provides a collection and credit service, managed by experienced personnel which assures sound risks and prompt payments.
6. It operates as a division of the member's own organization; always maintaining the good will existing between the member and the member's customers.

ADEQUACY IN NEW EVANSVILLE ORDINANCE

There are a number of interesting features in the new electrical ordinance of Evansville, Ind., including adequacy provisions for residences, bi-annual reinspection, reduced license fees from \$25.00 to \$10.00 and statement of what an inspector can and cannot do.

One rule states very definitely that the electrical inspector "in his official capacity, is not, however, empowered to and cannot lay out work



HEADS KALAMAZOO ASSOCIATIONS:
Carl E. Walters, contractor of Kalamazoo, Mich., in addition to being president of the local electric league, is also head of the contractor activities group.

BOOST YOUR 1932 BUSINESS

Take a sample CONDUO-BASE to a number of building owners or building managers of your acquaintance. Show them how inexpensively you can modernize their electric wiring and find to your surprise how many jobs you can thus dig up. Write us for details and samples.

Licensed Manufacturers:

Dahlstrom Metallic Door Co. United Metal Products Co.
Jamestown, New York Canton, Ohio

Knapp Bros. Mfg. Company
Chicago, Illinois



CONDUO-BASE

FOR CONVENIENCE OUTLETS

CONVENIENT .. INEXPENSIVE .. FIREPROOF .. ATTRACTIVE

Let color save you money. . . .

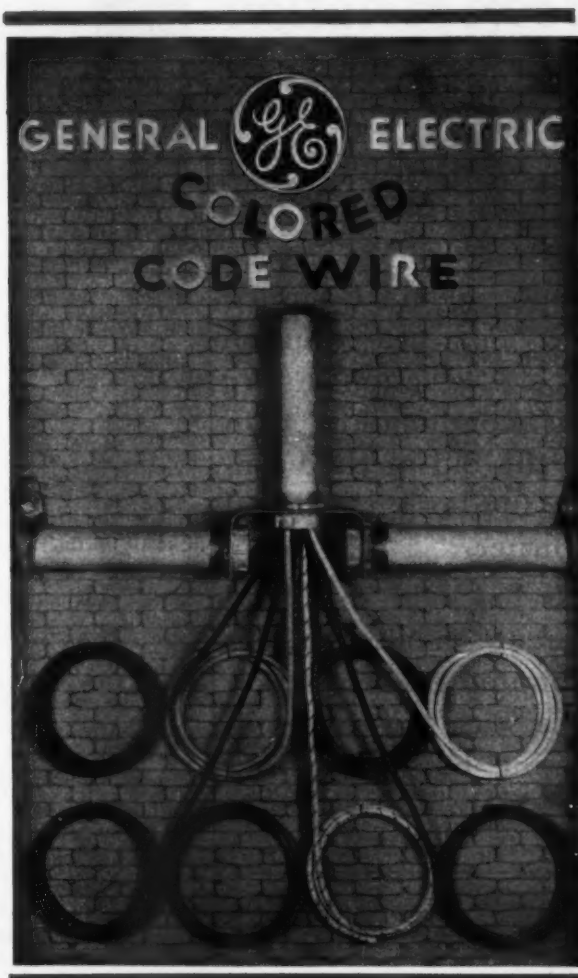
G-E Building Wires Come in
Three Colors of Insulation
and Eight Colors of Braid.

COLORED braids on G-E building wires have long been saving money for contractors by helping them to identify circuits without testing.

Now three colors of rubber insulation on G-E building wires identify the three grades, saving you any expense or delay when you want to prove the grade used. Simply exhibit the wire itself — *black* insulation shows it to be Code grade; *red*, Intermediate grade; and *green*, 30% grade.

G-E Code Wires amply meet all Underwriters' requirements. In addition to the coloring, anti-oxidants have been added to the rubber which increase its life, making each of the three commercial grades of insulation a "performance test compound" of definitely determined characteristics.

Insulation is as "free stripping" as regulations and good practice permit. Over-all diameters are the minimum allowed so that the maximum number of wires can be installed in a conduit. Braids are tighter and closer. The finish is "slicked".



Use G-E building wires, both because of their uniformly good quality and because they protect you against expense arising from disputes as to the grade installed, and these advanced features are offered in G-E Code Wires at no increase in price. Let them save you both trouble and money.

GENERAL ELECTRIC

CODE WIRE

MERCHANDISE DEPARTMENT, GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONNECTICUT

*You have
use for this
combination*

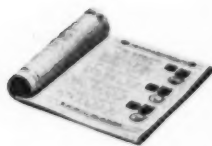


No. 664

**You can
make a much
neater instal-
lation using
this combination
than
by the old method em-
ploying both a bell and
a buzzer.**

**It has both bell and
buzzer movements
mounted on a common
base with the cover en-
closing both gong and
terminals.**

Send for our catalog for details
of this and other bells and but-
tons.



*Every
Electrical
Contractor
should have
this catalog*

**The ANSONIA
Electrical
Company**
Ansonia, Conn.

ANNUNCIATORS • BELLS • BUZZERS
PUSH BUTTONS • WIRE



**STARTED CONTRACTING BUSINESS 21
YEARS AGO:**—J. E. Taylor of Taylor
Electric Co., Pine Bluff, Ark., began
working as a wireman 30 years ago in
Hot Springs. He has had his own shop
and store in Pine Bluff since 1910, al-
ways combining wiring with merchan-
dising and paying special attention to
fixtures.

or act in the capacity of a consult-
ing engineer for inexperienced con-
tractors, mechanics or owners."

Householders may take out per-
mits to do their own work, provided
they have satisfied the electrical in-
spector that they have sufficient
knowledge to properly perform such
work.

All residences containing more
than five rooms shall have a min-
imum of 30-amp. 3-wire service with
at least a 6-circuit panelboard. In
all single family residences or tene-
ment houses there shall be installed
an appliance circuit with one appli-
ance receptacle in each kitchen and
breakfast room, bath-room and laun-
dry. Where No. 14 wire is used for
appliance circuit there shall not be
more than two appliance receptacles
and not more than four such recep-
tacles on a No. 12 circuit. Appliance
receptacles must be of the single
plug-in type.

For commercial and public build-
ings the minimum branch circuit is
No. 12 wire; for rooms from 50 to
100 ft. from panelboard to first out-
let No. 10 wire is minimum. Each
branch circuit panelboard shall pro-
vide one spare branch circuit posi-
tion for each five acting circuits or
fraction. Feeders must have suffi-
cient capacity to supply 10 amp. for
every 15 amp. branch circuit position
provided for. Conduits for enclos-
ing feeders shall be large enough to
permit replacing original feeders
with conductors two sizes larger or
50 percent greater in capacity.

ANNUAL FLORIDA MEETING

A joint meeting of electrical in-
spectors and contractor-dealers of
Florida will be held at the San Juan
Hotel, Orlando, Fla., February 29 to
March 2. This meeting, although be-
ing sponsored by the inspectors and
contractor-dealers, is open to all elec-
trical men of the state, and invita-
tions have been sent to all electrical
manufacturers, jobbers and central
station men.

Prominent figures in the electrical
industry will address the meetings on
various phases of the electrical field.

The question of the standardization
of materials and appliances will be
acted upon at this meeting, also the
elimination of sub-standard and non-
approved electrical materials and the
standardization of city code rules.

There will be a display of electrical
materials and appliances, and an ex-
tensive entertainment program is be-
ing planned by the local committee.

R. C. Bigby, Tampa, Fla., is presi-
dent of the contractor-dealers and C.
M. Fuss, Tampa, is president of the
inspectors. The local committee for
the meeting is headed by J. J. Newell
for the contractors and Harold N.
Lang for the inspectors.

CONTRACTOR FELONY ACT FOR MICHIGAN

This fall there became effective a
new act in Michigan making it a
felony for a contractor to use money
given him by an owner for any other
purpose than to pay the labor and
material bills it was intended to
cover. The act, which is very short,
follows:

"An act to protect the people of the
state from imposition and fraud in
the building construction industry and
to provide penalties for the violation of
this act.

"The People of the State of Michigan
enact:

"Section 1. In the building construc-
tion industry, the building contract fund
paid by the owner to a contractor,
or by the owner or contractor to a
subcontractor, shall be considered by
this act to be a trust fund, for the benefit
of the owners, contractors, laborers,
subcontractors or materialmen, and the
said contractor or subcontractor shall be
considered the trustee of all funds so
paid by him for building construction
purposes.

"Section 2. Any contractor or sub-
contractor engaged in the building con-
struction business, who, with intent to
defraud, shall retain or use the proceeds
or any part therefor, of any payment
made to him, for any other purpose
than to first pay laborers, subcontractors
and materialmen, engaged by him



The Successful Contractor of 1932

In these days of elusive business and reduced volume contractors are beginning to realize as never before that they must change their method to cope with present-day conditions.

Just Common Sense

Successful contractors who have come safely through the years have learned that the true measure of success in business is not size but progress—progress not necessarily in volume but in PROFITS.

Pays Profits

If you are in business to make money—not merely to make sales—you will want to learn how others are using the NATIONAL ELECTRICAL RESALE PRICE SERVICE to increase their profits. We will gladly send full particulars, without obligation, of course. Please attach the coupon below to your letterhead, as the service is furnished only to those actively engaged in the electrical business.

Henderson-Hazel Corporation,
5005 Euclid Ave.,
Cleveland, Ohio.

Gentlemen:

Without obligation please send us your booklet describing the NATIONAL ELECTRICAL RESALE PRICE SERVICE.

Name.....

Address.....

City or Town..... State.....

EC-1-32

DAY-BRITE REFLECTORS for STORES



No. 85

No. 85—Unwired unit, length 8 1/4 inches; drawn of brass, hinge porcelain socket. Standard finish, statuary bronze plated. For T-1/2 tubular lamp



No. 95

No. 95—Unwired unit, length 9 inches; made of brass, porcelain socket. Standard finish, statuary bronze plated. For standard lamp to 60 watts

BANKS



No. 1012

No. 1012—Standard 18-inch reflector with diffusing glass bottom, made of brass or steel, with steel porcelain enameled reflector and twin porcelain sockets. For standard lamp to 40 watts



No. 2600

No. 2600—Thin model sign for clear plate glass; outer frame, drawn bronze moulding; porcelain socket, intermediate base for T-3/4 lamp. Any standard finish.

SCHOOLS



No. 130

No. 130—Bracket light—length 9 inches; made of brass; porcelain socket, for T-10 tubular lamp. Standard round canopies and stems.



No. 720

No. 720—Picture reflector—length 9 inches; made of steel; porcelain socket for T-10 tubular lamp. Standard finish, gold spray.

BUILDINGS



No. 5050

intermediate base socket used for 8-11 lamp.



No. 5000

resting, sockets, twin porcelain for two lamps of 100 watt each.

DAY-BRITE COMPANY
3825 Laclede Ave. - Saint Louis

to perform labor or furnish material for the specific improvement, shall be guilty of felony in appropriating such funds to his own use while any amount for which he may be liable or become liable under the terms of his contract for such labor or material remains unpaid, and may be prosecuted upon the complaint of any persons so defrauded, and, upon conviction, shall be punished by a fine of not less than one hundred dollars or more than five thousand dollars and/or not less than six months nor more than three years imprisonment in a state prison at the discretion of the court.

"Section 3. The appropriation by a contractor, or any subcontractor, of any moneys paid to him for building operations before the payment by him of all moneys due or so to become due laborers, subcontractors, materialmen or others entitled to payment, shall be evidence of intent to defraud."

RED SEAL BRINGS SPECIAL OUTLETS

In its report of 22 Red Seal homes obtained in October, the Electric and Radio Association of Kansas City, Mo. draws attention to the special outlets going into Red Seal homes. Each one of the 22 Red Seal houses had an electric refrigeration outlet, whereas in 1930 less than 10 percent of the Red Seal homes had such outlets.

Other special outlets in the October Red Seal homes included 18 telephone, 19 radio, 8 ventilating fan, 4 clock, 3 range and 2 heater outlets.

60 AMP. MINIMUM ENTRANCE FOR YOUNGSTOWN

Three No. 6 wires and a 60 amp. switch for installations having a floor area of over 800 sq. ft. are the new minimum requirements of the Ohio Edison Company, Youngstown, Ohio. For smaller dwellings two No. 8 wires may be permitted.

In addition the company has set forth minimum service requirements for other types of installations as follows:

2.7 PERCENT FOR ELECTRICAL WORK

In a manual on better homes recently published by one of the organizations on the Planning Committee for the President's National Home Ownership and Building Conference, 2.7 percent was given as the amount of the building dollar that should be spent for electric wiring and fixtures in a home costing \$15,000 to build. The money value was \$405.00.

FOUR-DAY WEEK

A new working agreement between the East St. Louis electrical contractors and the local union contains provisions to take care of unemployment, principally through the allowance of a four-day week. The days are to be worked within the regular working schedule to be named by the contractor.

THE NATIONAL RURAL ELECTRIC PROJECT

The first report of The National Rural Electric Project, College Park, Maryland, has just been published, containing information as to the purpose, activities and personnel of the Project.

The National Rural Electric Project is an educational organization dedicated to the betterment of American farm income and living conditions. It was established to study the uses for electricity on the farm and in the farm home. The Project co-operates closely with the National Committee on the Relation of Electricity to Agriculture, particularly in its research program.

Electrical equipment is being demonstrated on five farms between Washington and Baltimore sponsored by the Project. A laboratory is also

	Size Wire	Size Conduit	Serv. Switch Amps.
One Family Dwelling			
Less than 800 sq. ft.	2 No. 8	1 in.	30
800 to 3000 sq. ft.	3 No. 6	1 in.	60
3000 to 6000 sq. ft.	3 No. 4	1 1/4 in.	100
Above 6000 sq. ft.	3 No. 2	1 1/2 in.	100
Duplex and Apartment Houses			
2 Family	3 No. 4	1 1/4 in.	60
3 Family and over	3 No. 2	1 1/2 in.	60
Larger Apartments are special.			
Commercial Installations			
1 2-wire circuit	2 No. 8	1 in.	30
Over 1 2-wire circuit less than 2000 sq. ft.	3 No. 6	1 in.	60
Areas 2000 sq. ft. to 4000 sq. ft.	3 No. 4	1 1/4 in.	100
Areas 4000 sq. ft. to 5000 sq. ft.	3 No. 2	1 1/2 in.	100

Get Orders *with the aid of*

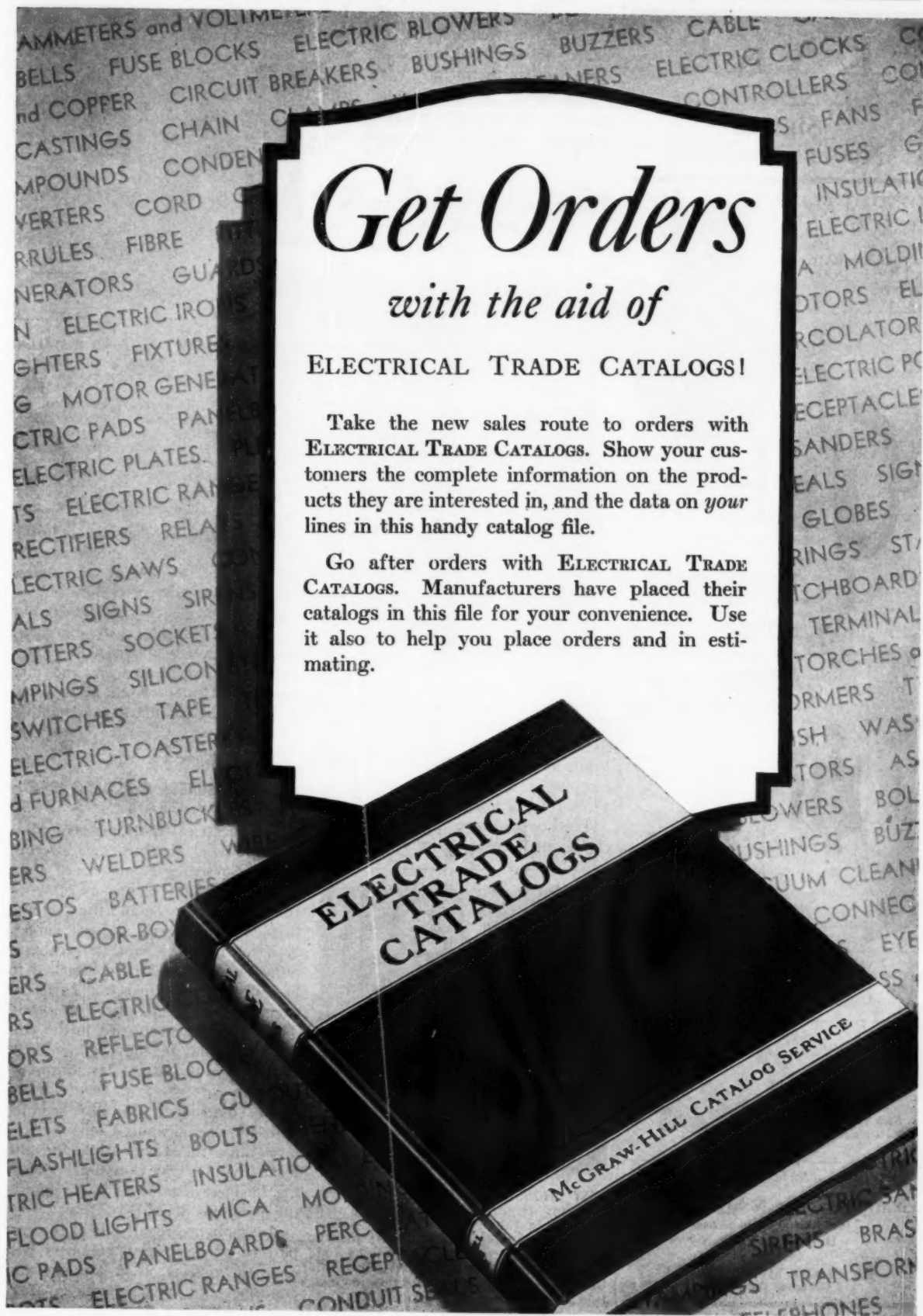
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Take the new sales route to orders with **ELECTRICAL TRADE CATALOGS**. Show your customers the complete information on the products they are interested in, and the data on *your* lines in this handy catalog file.

Go after orders with **ELECTRICAL TRADE CATALOGS**. Manufacturers have placed their catalogs in this file for your convenience. Use it also to help you place orders and in estimating.

**ELECTRICAL
TRADE
CATALOGS**

McGraw-Hill Catalog Service

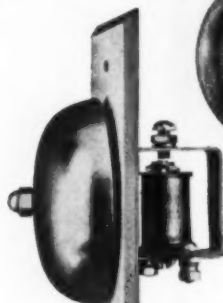


LAKE A-C No-Contact Signals Never Wear Out

2½" TO 14" BELLS, Standard Type shown at right, or Underdome Monitor Type Available, Are all Underwriter Approved.

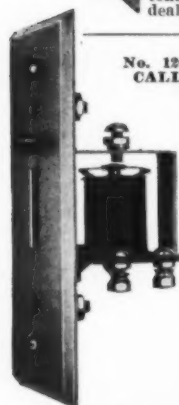


No. 700 Series
Cut shows 706-8" bell. Furnished with 12- to -24 V. 110 V. and 220 V. coils.



No. 116 COMBINATION BELL AND BUZZER

Mounts over single gang box, 12 V. std. coil, with tone adjustment. Price, to dealers, \$2.10.



No. 120-7 FLUSH RETURN CALL BUZZER STATION

Fits Single Gang Box. Price, 12 volts, \$2.40.

No. 124 FLUSH
12 volt Buzzer fits Single gang box. Price, \$1.75 without plate. Tone adjustment.



No. 112 SURFACE 12 VOLT BUZZER

Tone Adjustment
Price, Black, \$1.00
Nickel, \$1.20.
No Contacts.



Two Factories to Serve You

National Time & Signal Corp.

600 East Milwaukee Ave.

Detroit, Michigan

and

LAKE MFG. CO.

Oakland, California

maintained at the project office for researches and engineering developments of electrical processes and equipment for the farm.

This report, which is published in pamphlet form, fully describes and illustrates the five demonstration farms.

NEW FARM ELECTRIFICATION HANDBOOK

C. R. E. A Bulletin, Volume VII, No. 1, entitled "Electricity on the Farm and in Rural Communities" which has just been published by the Committee on the Relation of Electricity to Agriculture, Chicago, is almost a complete handbook on farm electrification.

This bulletin is a revision of the bulletin published January, 1928, and contains a comprehensive summary of the latest available information on more than one hundred rural uses for electricity. Its 332 pages contain 570 illustrations, 87 charts, 160 tables, as well as a bibliography of selected references. It is priced at \$1.00 per copy.

LICENSE ORDINANCE DEFEATED

The proposed ordinance licensing all electrical contractors, dealers and journeymen electricians under a board of electrical examiners, and sponsored by the Electragists of Flint, Mich., was defeated in the city commission on its second reading, by a vote of six to three.

The ordinance provided four classes of licenses as follows: Con-



MAKES SPECIALTY OF SOUND INSTALLATIONS:—H. H. Beerman has operated an ordinary construction business in Covington, Ky., for 25 years. He has done a great deal of large work including schools and of late years has specialized in "sound." He has made a large number of installations both for talking pictures and public address systems in theatres, schools and even at the Latonia Race Track.

tractors would be charged an initial fee of \$100 with an annual fee of \$25; dealers, \$1 a year and maintenance men \$5. No license fee would be charged to journeymen, but they would be subject to examinations by a five-man board of examiners to be appointed by the city manager. Dealers would be required to keep only standard merchandise for sale.

PLAN BUSINESS BUILDING PROGRAM

The Electrical Association of Malden, Melrose, Medford and Everett, Mass. is assisting employees of association members secure more work for their employers, and thus helping that employee retain his job longer. A letter is being sent to each employee which has a card attached to be filled out as prospect cards at every house where they do work. These cards are returned to the employer so that he may follow these prospects in the future for additional business.

The association is also sending letters to the Kiwanis Club, the Rotary Club, the Lions Club and the local Chambers of Commerce stressing business conditions and requesting jobs, not doles.

An appliance repair school for employees of association members will open the first week in January and continue until the last week in May.



BUSY INDUSTRIAL SPECIALIST:—F. W. Pleasant (right) and E. J. Bien are partners in the Pleasant Electric Company, Cincinnati, Ohio, and have plenty of work along the lines of additions and maintenance in the industrial plants of the city. They also sell monthly inspection to a long list of factories.

... see this new book for up-to-date methods, handy facts on hundreds of practical electrical jobs



—Just Published—

HANDBOOK OF INDUSTRIAL ELECTRICITY

by M. KUSHLAN
Electrical Engineer

525 pages, 4½ x 7, over 600 illustrations, diagrams and tables, flexible, \$4.00

HERE is a book prepared by a master electrical worker covering the many practical electrical jobs of today, telling clearly the methods for handling each in accordance with latest standards, giving a profusion of tables, data, circuits, diagrams and other helpful facts to which the worker often needs to refer in doing these jobs.

The book is expressly planned as a reference book for electricians engaged in installing and maintaining electrical equipment in residential, commercial and industrial buildings and outdoors. It answers literally hundreds of questions on the methods of wiring, inspecting and maintaining lighting, machinery and power installations of all kinds.

Technical and mathematical terms are either avoided, or are clearly defined and illustrated by practical examples. Standard practice is demonstrated by liberal reference to accepted rules and specifications, by over 500 illustrations and diagrams and 118 practical tables.

Space does not permit a really full and adequate description of this book. But we will gladly send a copy for 10 days' free examination on receipt of the coupon. Then after you have had an opportunity to look it over thoroughly, send us only \$4 in full payment, or return the book.

See this book for 10 days FREE—Send the coupon

"Should find a place among the most useful tools of the electrical worker's kit"

Can you use
ready, dependable
data on these:

- wiring industrial installations
- electrical wiring devices and methods
- house-wiring installations
- wiring in public buildings
- automobile and aviation wiring
- outdoor installations
- estimating
- reading plans
- radio installation
- electrical advertising practice
- testing
- electric heat applications
- inspection
- maintenance
- signal systems
- electric signs
- communicating systems
- electrical principles
- generating equipment
- refrigerating circuits, etc., etc.

All these and more are in this book, covered in satisfying, practical detail, by a man who knows the reference needs of the estimator, contractor, and practical electrical worker.

McGRAW-HILL FREE EXAMINATION COUPON

McGRAW-HILL BOOK CO., Inc.
330 W. 42d St., N. Y. C.

Send me Kushlan's Handbook of Industrial Electricity, postpaid, for ten days' FREE EXAMINATION. I will send \$4.00 or return the book within ten days of receipt.

Name.....

Address.....

City and State.....

Position.....

Company..... E.C. 1-32

SOMETHING NEW TO SELL



YOUR CHANCE to make a steady profit

Not all profit makers are ready sellers. But Strowger Auto-Com, the small *private telephone system* for stores, offices and public buildings, can be used everywhere. And it earns you a *real profit on every sale*.

You have a wide field for the sale of Strowger Auto-Com. Many business houses needing a private, interior system of communication are unable to afford larger and more expensive systems. Strowger Auto-Com, with its dependable, clear transmission, exactly meets their needs. Sales opportunities are unlimited.

Remember: Strowger Auto-Com is *built by the originator of the dial telephone*. It is easy to install and maintain. You stock it like any other piece of merchandise. *Dealers everywhere are selling more Auto-Com systems this year than ever before*. Write today for rights as exclusive dealer in your own territory. American Automatic Electric Sales Company, 1031 West Van Buren Street, Chicago, Ill.

Strowger Auto-Com

*Private Telephone System Made by the
Makers of Strowger P-A-X*

**Automatic
Electric Company**



WIRES SEVERAL GOVERNMENT JOBS:—Paul F. Thiele, Dix-Kelley Electric Co., Ft. Wayne, Ind., has five large government jobs completed in 1931. In addition to the George Rogers Clark Memorial, this company has wired the U. S. Post Offices at Louisville, Ky., Warsaw, Ft. Wayne and Decatur, in Indiana.

Meetings will be held weekly. The school room is provided by the central station, which is procuring teachers from the manufacturers of appliances which the contractors handle. As soon as the employees are qualified, they plan to take over all appliance repair work now being done by the utility.

CALIFORNIA ELECTRAGISTS MEET

Details of a revised suggested resale price data service, a consideration of the Certified Electrical Contractor plan, a review of the operation of the state contractors' license laws, and the recently approved trade practice rules for the electrical contracting industry were the chief items on a crowded program at the afternoon and evening session of the special meeting of the California Electragists, Northern Chapter, at Oakland, Calif., December 17, 1931.

Frank Sievers, national executive committeeman, reported on the Hot Springs convention of the Electragists, particularly stressing the fair trade practice rules, the trade policy committee work on central station merchandising plan, the unemployment plan of the Electrical Guild and the I.B.E.W., L. W. Davis' analysis on the cost of doing business, and the motor section's progress in evolving fair motor distribution agreements.

RALCO FITTINGS EXPLOSION PROOF

WE CAN HELP YOU to comply with Article 32, 1931 Code, by supplying explosion proof fittings that have passed the tests for Class I, Group D, and Class 2, Group G, locations.

We are showing below a few of the fittings which you can secure from us.

WRITE FOR FURTHER
INFORMATION



XP

Junction Box

is furnished in 3- and 4-inch sizes. The 3-inch size (XP-3) can be furnished drilled and tapped for either $\frac{1}{2}$ " or $\frac{3}{4}$ " conduit, as ordered. Bosses are provided for drilling four sides and back. The 4-inch (XP-4) size can be furnished drilled and tapped for $\frac{1}{2}$ ", $\frac{3}{4}$ ", or 1", as ordered.

Boxes are Cast Iron Cadmium Plated.

XPGP

Junction Box

is especially designed for making connections between the gasoline pump conduit and the underground conduit system, where two or more pumps are to be installed on any concrete pump island. Box is furnished with five $\frac{3}{4}$ " openings; one on top, one left side, one right side and two on bottom, with side opening plugged with removable Plugs.

This box with our UFMP Union can be made to fit any pump installation condition. The conduit end of this Union can be supplied threaded for either $\frac{1}{2}$ " or $\frac{3}{4}$ " conduit. The box end and union nut for $\frac{1}{2}$ " or $\frac{3}{4}$ " are identical. A very practical Box.

UFF—Union



Heavy type with heavy brass hexagonal nut, as shown. Made in sizes $\frac{1}{2}$ " and $\frac{3}{4}$ ".

UFM—Union



Heavy type with heavy brass hexagonal nut. Made in sizes $\frac{1}{2}$ " and $\frac{3}{4}$ ". The $\frac{3}{4}$ " can be furnished with conduit end threaded for $\frac{1}{2}$ " conduit.

RALCO MANUFACTURING COMPANY

125 North Albany Avenue
Chicago, Illinois, U. S. A.



A TAPE TO MEET THE NEEDS OF EVERY ELECTRICAL REQUIREMENT

The exacting standards of General Electric as to the quality of materials used in its products is your guarantee that G-E Friction and Rubber Tapes assure greater service and more lasting protection. Economical—G-E Tapes cost no more—use them on every

electrical installation where dependable friction or rubber tape is required. Your nearest G-E Merchandise Distributor stocks a complete line of G-E Tapes. See him or write Section M-321, Merchandise Department, Bridgeport, Connecticut.

GENERAL ELECTRIC

TAPES

MERCHANDISE DEPARTMENT, GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONNECTICUT

Lighting For Contractors

By a Manufacturer Who Understands Your Problems



In order that the finest possible lighting effects may be secured for any building, we maintain a completely equipped lighting demonstration

studio at our factory.

Here—with the hearty cooperation of our corps of experienced lighting engineers—a

complete program of lighting effects can be worked out, and Hub equipment specially designed to produce every desired lighting effect.

You are cordially invited to make free use of all of our facilities as it fits your convenience. The complete facilities of our capable organization are yours to command.

FREE

Comprehensive Lighting Handbook just published. We will be glad to send it to you.

HUB ELECTRIC COMPANY

Complete Electric Lighting Equipment

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Milwaukee, Minneapolis

Beating Competition with Brains

Competition is tough in the electrical contracting business these days; and every day it gets worse. Successful contractors have found they can beat fly-by-night competition best by using their brains, and by educating their responsible employees. You can help your head men to keep abreast of the times and save you money by sending each his own copy of **ELECTRICAL CONTRACTING**.

JOINT INDUSTRY CONFERENCE ON ADEQUACY STANDARDS

The first meeting of the Joint Industry Conference on Adequacy Standards for Residence Wiring, was held on December 7. This conference, which was initiated at the Chicago meeting of the Commercial National Section of N.E.L.A. last July, was organized during the meeting at Camp Cooperation XI at Association Island last summer.

With reference to the subject of outlets, switch control and branch circuits, the committee found the material of the Society for Electrical Development, the Association of Electragists and the Washington Conference somewhat similar and suitable as a basis for discussion from which conclusions could be drawn. The committee also discussed heavier circuits and recommendations are to be made on these.

The membership committee consists of H. H. Balkam and E. W. Commery for the Illuminating Engineering Society; L. F. Adams, C. A. Bates, H. J. Mauger, Frank Thornton, Jr. and F. C. Hodgkinson for N.E.M.A.; F. R. Elliott and E. A. Hawkins for the N.E.W.A.; J. S. Bartlett and Kenneth McIntyre for the Society for Electrical Development; E. A. Brand and F. H. Stone for the N.E.L.A., and L. W. Davis, informal observer for A.E.I.

HOLD ANNUAL DINNER DANCE

The Toronto Chapter of Ontario Electrical Contractors Association will hold its annual dinner dance at the Royal York Hotel, Toronto on February 8.

At the annual dinner held last year 563 attended, and it is expected that over 600 will attend this year.

The committee in charge consists of G. Alexander, H. Bertram, H. Blenkarn, W. Burman, J. Craig, G. E. Davenport (master of ceremonies), George Gander (secretary), G. W. Leach and H. H. Windelar (president).

ADDITIONAL WIRING CAMPAIGN

Co-operative plan for selling additional wiring and fixtures has recently been announced by the Electrical League of Milwaukee. The plan contemplates the carrying of time payments by the power company on all additional wiring and fixtures amounting to \$25.00 or more on an 18-months basis.

MASON CITY CHAPTER HELPS POOR

The Mason City (Iowa) Electricists have contributed, as a group, to the work of the local charitable organizations by making contributions from the funds of the chapter.

This chapter is working out a new plan for meetings whereby one-half of the meetings are purely business and the other half purely social.

H. C. Determan, secretary of the chapter, reports that they are still working on a local ordinance but are having considerable difficulty in presenting it to the city directors.

HARRY F. SPIER

Harry F. Spier, proprietor of the Guarantee Electric Co., Battle Creek, Mich., died suddenly at his office on December 4, 1931, of heart failure.

Mr. Spier was born near Lyon, Neb., April, 1884, and when quite young moved with his family to Battle Creek where he spent part of his early life. He entered the electrical



H. F. Spier

contracting business about 14 years ago, previous to which time he was connected with the Central Electric Co. and Edison Telephone Co. of Chicago for a number of years.

Mr. Spier's work has included many of the schools and theatre buildings in the state of Michigan, and he has wired the university stadium, the Yost field house at the university, and many hotels and hospitals throughout the state.



Here's new business for the electrical contractor

... the sale and installation of the DUNCO Light-sensitive Cell Unit which provides infallibly automatic operations in hundreds of places.

This seemingly "mysterious" development has found a permanent place in the everyday affairs of commerce, industry and even in home life.

Get the details from your wholesaler's salesman the next time he calls, or write us for Bulletin P-17.

with the
New
DUNCO
Light
Sensitive
CELL
UNIT



OAMCO REFLECTORS OAMCO INDUSTRIAL REFLECTORS



No. 547B
DEEP CONE TIN



No. 909
DEEP BOWL



No. 871A
STANDARD DOME



No. 0766
SHALLOW BOWL

There's an OAMCO reflector for every industrial use—mills, factories, printing shops, machine shops, etc., need these high grade reflectors for speedy and better work. You're assured ease of installation and your customers are assured of a better job when you install OAMCO reflectors.

Write for catalogue today.

**OVERBACH &
AYRES MFG. CO.**
413 S. Clinton St.
CHICAGO ILL.

A ROLL O' TAPE

ELECTRICAL FLASHES
GATHERED AMONG THE
BIG WIRE AND PIPE MEN

BY

COIT A. (DUKE) SMITH
AND WALTER HOLMES
FIELD EDITORS
ELECTRICAL CONTRACTING

IN the revised code of New Rochelle, N. Y., the charge of \$2.00 for inspection of electrical and plumbing work is waived on all jobs amounting to less than \$15.00.

THE Fort Wayne (Ind.) Electrical Contractors' Association for the past six months has arranged for a segregated list of its members in the classified telephone directory. At the top of the column this heading stands out: "Licensed Electrical Contractors' Association" and this statement follows in a box: "This sign identifies the leading electrical contractors of this community and gives assurance of quality and service in their electrical work." The names of the members are then listed alphabetically.

MOTLEY Bros., Memphis, Tenn., electragists, recently secured a nice contract for traffic signals in that city. The job consists of installing four lights at each of nine intersections, using seven conductor lead cable, underground. All the signals are individually controlled, but certain ones are arranged so they can be tied in with others when necessary.

THE Smith Downes Company, being the largest in Stamford, Conn., I asked its president, Mr. Holly, why some contractors remain small all their lives and others grow. He had no recipe for success but he did have a tip worth thinking about. "It is not enough to do a job that meets the approval of the customer," he explained. "For instance, although the customer may not think of it, we strongly urge underground service for a residence because it does not cost much more to install and is something that gives permanent satisfaction. Five years from now the owner will forget what he paid for the installation but if

15 Improvements in the New "Reliance"

GUARANTEED



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For 22 years the Reliance has been the standard of quality. With these latest improvements it is a step ahead. Constructed throughout of best materials skillfully put together to insure perfect operation. Turns current ON and OFF for 8 days with one winding. Types to fill all requirements.

Reliance Automatic Lighting Co.
Racine Wisconsin

Also manufacturers of the famous ACE and Racine Time Switches.

Lowest Prices
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ADVERTISED RADIO
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GOODS!

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Write for
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FREE!

PARAMOUNT
ELECTRICAL SUPPLY COMPANY
(WHOLESALE ONLY)
606 W. ADAMS ST., CHICAGO

the people next door have underground service and he has unsightly overhead wires he will feel that he has not dealt with a first class contractor."

It should also be mentioned, in connection with this Christmas, as for a number of years before, the Jaggars-Sroufe Co. furnished and supervised the installation of some 2,500 lights for the 120-ft., Portland, Ore., community Christmas tree, free-of-charge. That is quite a stock of decorative material, but strange to say, they do not have to carry it over from year to year. Most of it gets sold, one way and another during the ensuing twelve months.

WHEN I called at the National Electric Company, Passaic, N. J., I noticed in the window a nice display of groceries and a notice of the FEED A FAMILY FOR A WEEK campaign. With each wiring job or sale of a major appliance this contractor is giving a week's supply of groceries to some needy family.

THE Electric Service Maintenance Co., Bridgeport, Conn., take it upon themselves to have about the most complete fund of motor data in that section of the country. People who are not customers frequently call on them for information and it is always cheerfully given because, sooner or later, most of them come back with profitable jobs for this contractor.

NICHOLAS J. KELLY, chief engineer of light and power New York City, reports that fire damage from improper wiring cost the city \$600,000 last year. Most of this was due to flexible cord hung by householders.

ACCORDING to our information the material for floodlighting the dome of the Rhode Island State Capital Building has been specified but the exact manner of doing the job has not. The bidding contractors know the desired effect of the job and they are to use their own judgment in laying out what they believe to be an adequate and efficient system of wiring. Price, adequacy and layout will all be considered in awarding the contract. This is the kind of a job contractors like to figure.

EARLY this year T. A. McNelis of Kingston, N. Y., walked into a large food store to make a purchase and was distressed by the direct glaring light in the place. He told the owner what was wrong and what should be done about it. The result was a new lighting job. And recently the appreciative customer told the contractor that sales for one month with the new lights were \$1,600 more than the same month



Smooth GLASS-LIKE RACEWAY

UP, down, across,
around sharp bends,
through joints . . .
wires glide through

Fretz-Moon Conduit with the slip and speed of
a child on a waxed slide.

Every length of Fretz-Moon Conduit is as smooth as a glass tube. The enamel coating, while tough and flexible, provides a fast raceway. The weld is as clean inside as outside. There are no rough edges or burrs to impede the wire. Ends are reamed to provide free-running joints.

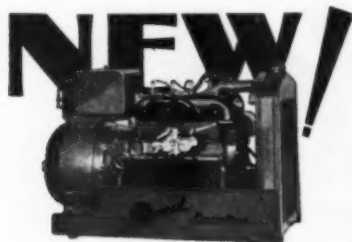
The enamel is a special formula. It is hard and smooth, yet possesses toughness and flexibility. That is why sharp bends in Fretz-Moon Conduit are easy to fish.

All three brands of Fretz-Moon Conduit—ENAMELITE, black enameled; ELECTRO GALVITE, electro-galvanized; HOT DIPPED GALVITE, hot galvanized—have this super-running raceway that saves installation time and trouble.

FRETZ-MOON TUBE CO., Inc.
Butler, Penna.

FRETZ-MOON RIGID CONDUIT





Smallest, most compact, 4 cyl. electric Plant

GET OUR PROPOSITION

Hospitals, hotels, theaters and many types of public buildings are requiring the installation of individual Electric Plants for emergency service.

Contracts like this represent good, profitable business for you. Go after it. With the proven dependability of Universal—you can guarantee 100% satisfactory service. With the specialized background we have established in this field—we can provide you with expert technical data to clinch the sale for any type of industrial, commercial or marine installation. The Universal Line ranges from 1 to 35 K.W.—AC and DC—32, 110 or 220 volts.

UNIVERSAL MOTOR CO.
310 Universal Drive
Oshkosh, Wis.



Write, and get our proposition regarding increased discounts and about the profitable opportunities that exist in this growing electrical field.

Specially Designed



No. 450

for apartment house use or anywhere a lock is to be operated by remote control, the No. 450 Liberty Door Opener is compact, rugged and can be used on right or left hand doors.

SOLID BRASS

is used for most parts of the No. 450 Door Opener. Turning pins are of special steel to give perfect operation.

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descriptive bulletin showing this and other members of the high quality, low cost

LIBERTY LINE

CLIP AND MAIL TODAY

The Liberty Bell Mfg. Co.,
Minerva, Ohio

Gentlemen: Please send me complete information on your No. 450 Door Opener and other Liberty Line high quality low cost devices.

Name.....

Address.....

City.....

State.....

a year ago before the glare had been eliminated from the lighting. Proper lighting was one factor that made this increase possible.

THE Nager Electric Co., Brooklyn, N. Y., industrial specialists, find that it pays to keep informed about factories moving in or out of the neighborhood. In either case there are electrical changes to be made and in many instances it means new customers. The firm employs a solicitor to make estimates and bring in new business.

H. H. BURG of the Burgy Electrical Works, Vancouver, Wash., has a rather interesting job underway in the remodeling of the old theatre building into a dance hall and lodge hall room with restaurant facilities. In the installation is an inter-communicating telephone system between the kitchen and lunch counter, in connection with which is a microphone in the lunch room and loud speaker in the kitchen. The microphone is built in near the lunch counter and practically hidden from view. The waitress gives her order to it in an ordinary tone of voice and the order is repeated in the kitchen so that the chef need not pause in his work. He has a push button at the range connected to a bell in the lunch room, and he merely pushes this to acknowledge orders.

JOHN BOYKO has been appointed to take charge of the electrical bureau at Passaic, N. J. Until recently he was in charge of fire alarm apparatus in the city of Passaic. Mr. Boyko was an electrician in the U. S. Navy for many years prior to his employment by the city.

THE largest electrical job ever awarded in St. Paul, Minn., was that for wiring the new First National Bank Building which was opened a few days before Christmas. The work was done by the Commonwealth Electric Co.

ONE interesting feature of the broadcasting station installed by the Belmont Electric Company (A. Lincoln Bush, president), New York City, in the Empire State Building is the door switch that cuts off the current when the door to the transformer vault is opened. Electricity is becoming less dangerous for the innocent bystander. Ventilation and cooling is another feature of this job and much of the apparatus is cooled by running water.

THE classified telephone directories of New York City are boosting business for the contractors. I noticed a newspaper ad the other day advising the public to look under "Electrical Contractors" in the 'phone book in case anything is wrong with the bell, lights,

etc. Incidentally, there are about two pages of "Electricians" who fail to get a break in this publicity, but at any rate the advertisers are showing that their hearts are in the right place.

ONE of the interesting demonstrations in the new lighting exhibit of the Electrical Association of Philadelphia is a board with two sets of wire, No. 8 and No. 14, on a 75-foot run. Meters mounted on the board show the comparative loss of current in the use of the different sized wire.

CONTRACTORS in New York are getting together with the central stations on the idea of selling a.c. to places now served by d.c. A meeting of the Electrical Association of New York at which this subject will be discussed is planned for sometime in February.

VANCOUVER, WASH., has recently passed a new electrical ordinance, requiring all electrical work in connection with the installation of oil burners to be done by a licensed electrical contractor. This was necessitated because of a number of fires caused by defective wiring in connection with oil burners. Heretofore the oil burner people had done the work themselves. But the competition among them was so great and there was so much price cutting, that it appeared they had been skimping the wiring beyond the safety point. Either that or lack of practical knowledge.

ONE commonly accepted truism is that the electrical contractor has virtually no repeat business. The Lord Electric Company, New York City, however states that since 1895 it has filled over 10,000 repeat orders, aggregating over \$40,000,000. In explaining its success this company points out that thirty-six men have been with it continually for twenty years or more. In many instances, the company states, it has performed from forty to fifty successive contracts for the same architect, engineer or general contractor. Its total business since 1895 has amounted to something over \$60,000,000.

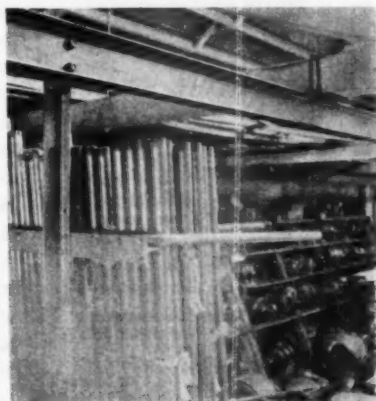
THE Rogers Electric Co., Birmingham, Ala., specializes on theatre work. This firm has not only secured most of the city theatre work, but has installed practically all the sound equipment in the State of Alabama, including public address systems.

IF the wall plug needs repairing, if your electric cord is broken, if you have an unruly electrical appliance, call an Electragist." Thus reads a 6 by 3 card that the trouble men of the Nebraska Power Co., Omaha, distribute to customers whenever there is any inside work to be done. The card lists the names of the members of the Omaha Chapter of Electragists, their addresses and telephone number.

PRACTICAL METHODS

CONDUIT STOCK RESTS

Convenient rests for conduit stocks are made by the Electric Maintenance Service Co., Bridgeport, Conn., from 1-in. conduit bent in a "U" shape.



Conduits in "U" Racks

The base and angle iron rest as shown in the photo are drilled and bolted together. Only half as many "U's" are required as there are compartments desired for the conduit. One "U" is placed on the end, then a space and then another "U," etc. Example: U U U U Four "U's" and seven compartments for conduit. The contractor makes up the "U's" of a sufficient width to accommodate the amount of conduit of each size that he expects to carry. No "U's" are required at the bottom of the rack.

FLUSH MOUNTING SAFETY SWITCHES

In many installations it is necessary or advisable to provide a flush mounting for safety switches in a finished wall. In such cases the work is complicated by the handle, which protrudes at the side of the steel casing of the switch. For this the main cut is extended at the side, forming a chamber of the proper size, which will allow the handle to operate easily.

In order to make a neat job and leave this hole smooth, C. O. Mc-

6 AMP.

No. 41

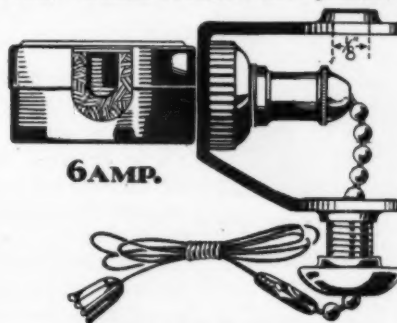


Only
 $\frac{5}{8}$ of an inch
McGILL
THIN MODEL
Levolver

You can't fool a micrometer . . . in fact the Thin Model Levolver is nothing to fool about. Manufacturing a switch of its size and large carrying capacity is no small job. It's a big job, a big switch made up in a small size . . . that electrical specialists think mighty fine.

No. 41 is only $\frac{5}{8}$ of an inch in thickness. It may be had in three stem lengths or with plain lever. And can be used as Thin Model Link Switch with chain fixture.

A really Valuable Product—have you seen one?



No. 38—Actual Size. 6 Amp.—125 Volt

A new Levolver Switch application for either deep or shallow individually controlled ceiling fixtures with center pull. This practical device can be used in any ceiling installation having any number of lights up to 600 Watts.

Shall we send you an attractive folder explaining further about the complete line of Levolver Switches?

Levolver

Pull Switch
Breaker Switch
Center Pull Switch
Center Pull Switch
Center Pull Switch
Center Pull Switch
Center Pull Switch
Center Pull Switch
Center Pull Switch
Center Pull Switch

McGILL

MANUFACTURING CO.

Electrical Specialties of Quality

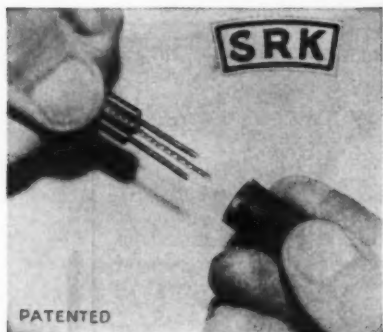
ESTABLISHED 1904

VALPARAISO • INDIANA

Box No. 670

Levolver

Wide Lever Switch
Portable Lever Switch
Wide Lever Switch
Wide Lever Switch
Wide Lever Switch
Wide Lever Switch
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Wide Lever Switch
Wide Lever Switch



U. S. Pat. Nos. 1,635,905 and 1,736,507. Infringements will be vigorously prosecuted.



The connector with a specially threaded metal insert

No SAFER or surer way to make wire connections

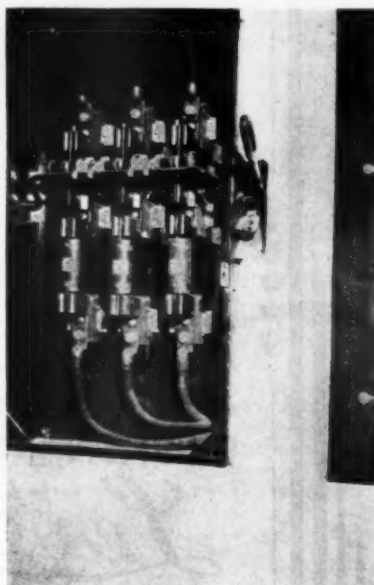
The S R K Connector will make all joints commonly encountered for combinations of No. 14, No. 16 and No. 18 solid or stranded up to 4 No. 14 and 2 No. 18 or equivalent without solder or tape.

Ask your jobber's salesman to demonstrate the S R K. Und. and Factory Mutual Labs. approval.

JIFFY WIRE CONNECTOR CO.
7-9 Bridge St. Hackensack, N. J.

General Sales Office
G. DENN MONTGOMERY, Jr.
458 Broadway, New York City
Phone CANal 6-7533 and 6-6106

Crory, McCrory Electric Co., Memphis, Tenn., uses two pieces of heavy tin, which can be picked up in scraps on any job. The bottom piece is cut to the exact width of the cavity and slightly longer, to allow for a fit when it is bent and pressed in. The other piece is cut in a triangle and forms the right side of the lining, the



Flush-Mounted Safety Switch, with Recess for Handle

left side being the casing of the switch. A little extra work will put a 1/4-in. flange on the pieces for added neatness. The pieces need not be fastened together, as they are fitted tightly and hold each other.

MAKING BOXES STAY PUT

Wherever there are a number of switch and outlet boxes installed on a new structure, there is always the big problem of having them remain straight throughout the onslaught of the plasterers. Contractors and mechanics agree that, unless some preventive method is employed, the boxes must be watched while the plastering is being done.

The men of the Arkansas Electric Co., Little Rock, Ark., use a simple system of anchoring that works 100 percent. When the boxes are fastened on the end of the conduit, a piece of lath or any straight, strong stick, is nailed firmly to the nearest wooden upright so as to extend across the face of the box. The box is then carefully lined up absolutely

TRADE PAINE MARK



PAINE SECTIONAL SWITCH BOXES

Conduit, BX, Loom, Romex Galvanized—Enameled

BIG TIME SAVERS

Easily Gangable

Clean Knockouts

EXCEPTIONALLY LOW PRICES

Sample on request

ASK YOUR JOBBER OR WRITE FOR PRICES

THE PAINE COMPANY
2945 Carroll Ave. Chicago, Ill.
79 Barclay St. New York City

ARMSTRONG BROS.



Unbeatable Equipment for Conduit Threading

You can't equal the combination of light compact ARMSTRONG BROS. Chain Vise, ARMSTRONG BROS. Triplex Stock equipped with 3 ARMSTRONG BROS. Pipe Dies of improved design, with "backed-off" Vanadium Tool Steel Chasers that cut faster, last longer.



ARMSTRONG BROS. (Patented) Chain Pipe Vise

Drop Forged 1-piece jaw, base and handle. Alloy steel screws. Proof-tested chains. Conduit cannot bend; fully supported between jaws.

Write for Catalog P-10

ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
341 N. Francisco Ave., CHICAGO, U. S. A.

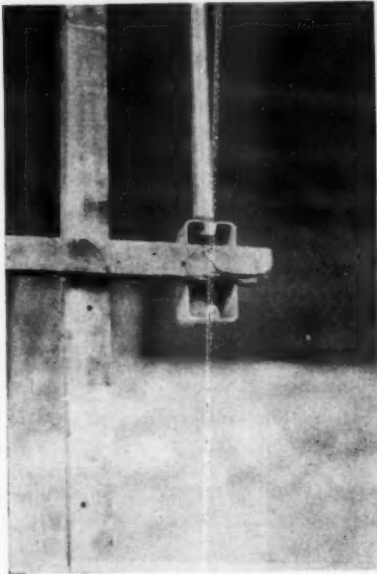
the PARAGON TIME SWITCH



An outstanding development in the field of modern clock engineering. Complete in every detail for effectively performing all known time switch operations. Neat, compact, and sturdy in design and construction.

Low in price due to simplicity and modern methods of manufacture and unconditionally guaranteed. Write for full information and liberal dealer's discounts. We have the answer to all your key-wound and electrically-wound time switch problems.

PARAGON ELECTRIC CO.
37 W. VAN BUREN STREET
CHICAGO

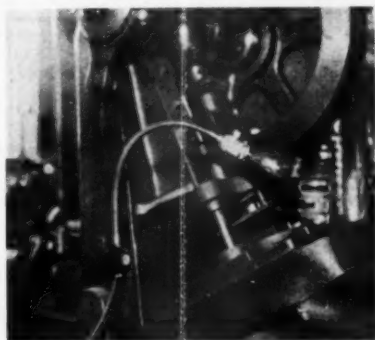


Box Anchored to Nearest Upright straight and wired to the crosspiece with a scrap of wire, which can be picked up around the building. No further attention or straightening is needed and the men are relieved of much unnecessary work and watching.

PUTTING LIGHT ON THE SPOT

In every machine shop or factory there is a certain area on each machine where concentrated light is needed while the actual work is in progress. Overhead lighting may be sufficient in many cases but often dark days or night work require a more intensive system. Then, if the only light comes from above, the men take to using extensions and soon the place is cluttered up with cords.

A St. Louis contractor, Ray Great-house, ran into such a situation in one of the factories he serves. Al-



Flexible Arm Unit for Individual Machines

WADSWORTH Enclosed Branch Circuit Cutouts

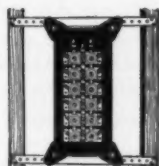
Flush Mounting Types

For real Economy there is none better

WADSWORTH FEATURES

For Old or New Jobs the three methods of support eliminate unnecessary installation trouble.

Ample space, and terminals so located that you can see and reach them, greatly simplifies wiring.



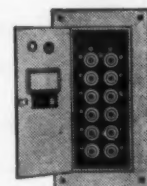
No. 12FN
Roughed in
Position

Enclosed Branch Circuit Cutouts

Dead Front Construction
from 2 to 12 circuits

Plug Fuse Distribution
Arranged for 2 or 3 Wire
Service

Aluminized Trim



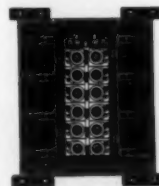
No. 12FN
Dead Front and
Trim in place

Enclosed Branch Circuit Cutouts

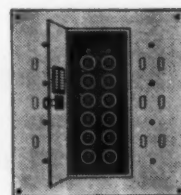
For
Toggle Switches

Plug Fuse Distribution
from 4 to 12 circuits
Dead Front Construction
Arranged for 2 or 3 wire
service

Aluminized Trim



No. 12FTN
Without Dead
Front or Trim



No. 12FTN
Dead Front and
Trim in place

Catalog No. 100-A gives complete information.
Write for it.

The WADSWORTH ELECTRIC MFG. CO. INC.
Covington, Kentucky



Eliminates triple handling—unwinding—measuring and rewinding wire, thus saving time and money. Manually operated—reels wire into neat coil, automatically counting and registering number of feet. Strongly built of heavy selected materials so as to last a lifetime.

It Pays for Itself

Send for bulletin
Write us or your jobber

**Minneapolis Electric
and Construction Co.**

80 S. 12th St.
Minneapolis Minn.



Subscribers

You can't afford
to miss a single
issue.

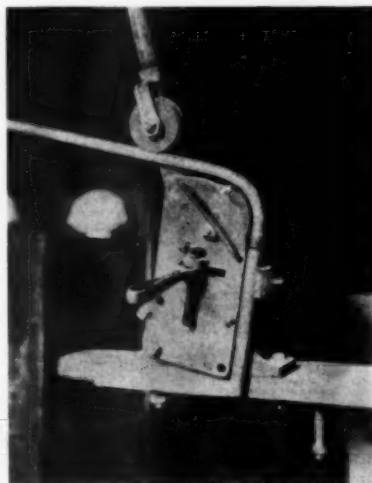
Give us your
new address if
you have
moved.



though it was a "daylight" plant with many windows, he noticed the extension habit was growing and offered a solution. However, the problem of bringing light to each of over 30 machines proved to be a difficult one because there were so many different types of machines. Mr. Greathouse provided a solution by furnishing and installing 30-in. flexible arm units, each fastened to a 3¼-in. outlet box, which in turn is bolted to the machine. The current is brought to the box through a reinforced portable cord from the post beside the machine, the current being brought down the post from the runs on the ceiling. The factory reports a great increase in efficiency.

ATTACHMENT FOR SHORT BENDS

When the Arkansas Electric Co., Little Rock, Ark., wanted a large number of very short bends in record time, Bill Schriver, foreman, worked out an attachment which is efficient and easily adjustable. First he made a half moon of iron and put a groove in it to hold the pipe. In this he drilled two holes for bolts and put two corresponding holes in the face of the bender. As shown in the illustration, the pipe is held for bend-



Bender and Attachment.

ing by a piece of ¾ in. pipe, which is held firmly by the regular clamp of the bender. At the top of this tube is a ¾ to ½ in. reducer, sawed off. The conduit to be bent is inserted in the reducer, after the holder is adjusted to give the proper radius. This attachment not only makes the very short bends but will make longer ones according to where the ¾ in. is clamped.

SHERMAN CONNECTORS

Connector consists of two seamless copper terminals so constructed that when bolted are in perfect alignment making a perfect connection.



They provide ample current carrying capacity and have extra long wire bolt to insure strong soldered connection.



SET SCREW CONNECTOR

Made from solid brass rod by Sherman Precision Method. Furnished in 14 different sizes. Each size plainly marked for easy stock keeping and reordering.

Screws heavily rust proofed. Sherman Connectors can be used over and over again.

H. B. SHERMAN MFG. CO.
Battle Creek, Mich.

MINERALLAC PRODUCTS



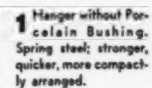
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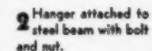
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HANGERS FOR CABLES & CONDUITS

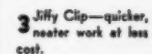
Easily the best for quick, low-cost installation work. Send for full details and costs.



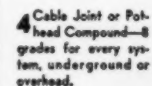
1. Hanger without Porcelain Bushing. Spring steel; stronger, quicker, more compactly arranged.



2. Hanger attached to steel beam with bolt and nut.



3. Jiffy Clip—quicker, neater work at less cost.



4. Cable Joint or Pot-head Compound—8 grades for every system, underground or overhead.



JIFFY CLIPS



Insulating Compounds

MINERALLAC ELECTRIC CO.
25 North Peoria Street, Chicago, Ill.

(Continued from page 66)

company carried a sample electric stove on display at all times, then the lighting companies started selling at cut rates which we could not compete with and we gave up the electric stove business. However, that is all past history.

About a year ago the Edison company came through with a plan for selling electric stoves which looked good to the contractor-dealer. In the first place they agreed to sell at list and to pay for the wiring of these ranges, whether the dealer sold it or whether it was sold by the company. The wiring contracts were let out to the contractors on bid, the low bid receiving the contract except when a contractor-dealer sold a stove, then the contract was awarded to the one who made the sale if the price was reasonable. At this time they pledged themselves to maintain list prices and as far as we know they have continued and still are.

We are now showing on our floor some five electric stoves and water heaters which we have stocked on the statements of the lighting company that they would maintain list prices. We have had some success selling, but not near the volume which we had hoped.

At present as I say the lighting company is selling at list prices and is cooperating with the contractor-dealer. I do not see what this article refers to and wonder if the paragraph which was printed is not merely one paragraph in a long report misleading without the rest of same.

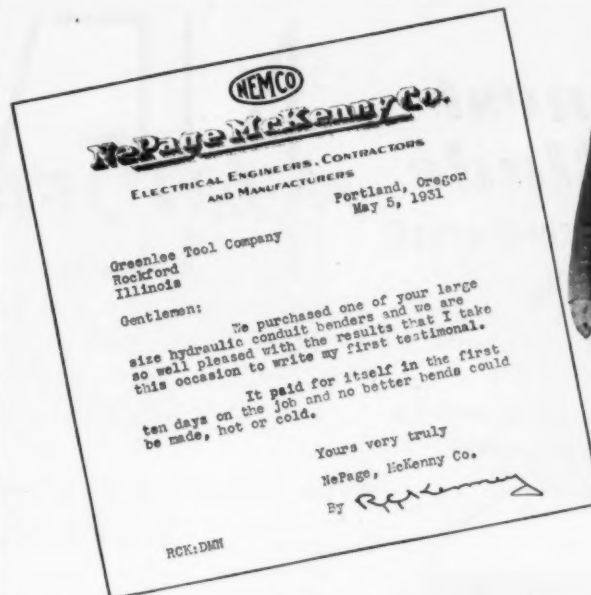
O. L. HAWES,
Hawes Electric Co.

Watertown, Mass.

[We do not believe that we have misstated the situation as given by Mr. Caddigan (the speaker referred to), at Association Island. At the same time, we do not believe Mr. Caddigan intended to convey the idea that no dealers were doing a good selling job. He has told us repeatedly that there were some dealers in the territory who were doing an excellent job.

The main thought, however, that we wanted to express, and this has received much favorable comment, is that contractors and dealers must be ready to provide a market to replace one which they may ask a utility to abandon. Too many times utilities have started some such cooperative movement with contractors and dealers and found that the results did not begin to measure up to expectations.

When these things happen it gives the contractor and dealer a black eye and makes it just so much more difficult to engage in cooperative activities again. —Editor.]



"Paid for Itself in the First Ten Days"

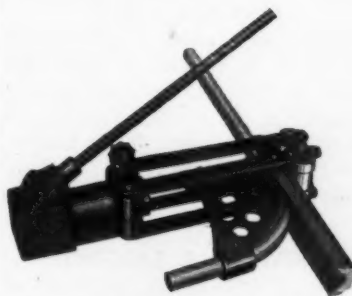
Here is another enthusiastic user of Greenlee Conduit Benders—Mr. R. C. Kenney, Manager of NePage McKenny Co., Portland, Oregon. This machine paid for itself in the first ten days on the job. Read what Mr. Kenney has to say about his No. 775. It explains why Greenlee Benders have had such a remarkable sale since their introduction to the trade, a little over a year ago.

Contractors can save money with these machines, because they bend conduit swiftly and easily, leaving a bend that is round and true with little or no distortion in the metal. Bending is ac-

complished by hydraulic pressure forcing a shoe against the conduit.

A big feature of Greenlee Benders is their portability. They are light for the work they do and can easily be carried from place to place.

Greenlee Benders can be equipped to bend both standard and thin-wall steel conduit, by purchasing the necessary attachments. The No. 770 bends 1½, 1¾, 2, 2½ and 3-inch standard conduit. The No. 775 bends 2¾, 3, 3½, 4 and 4½-inch standard conduit. The No. 770T bends 1½, 1¾ and 2-inch thin-wall steel conduit. The No. 770T is the same machine as the No. 770, except for a few extra fittings.



No. 770T Thin-Wall Steel Conduit Bender. The conduit is supported by a formed bar which moves to the right as power is applied. The follow bar supports the conduit, preventing kinking and distortion.



No. 770 Standard Conduit Bender. Two rotating support castings, arranged to accommodate different sizes, hold the piece being bent while the shoe is forced by hydraulic power against the conduit.

Mail This Coupon Today

GREENLEE TOOL CO., ROCKFORD, ILL.

We are interested in lowering our bending costs. Send at once complete information, prices and discounts on your Hydraulic Benders.

1-32

Name

Address

City.....State.....

My Jobber is.....

The Keenest Blade that ever cut BX

or conduit, wire mold
metal cable, etc.

—and it's so easy to
start the cut!



Ask for the —ELECTRICIANS— SPECIAL

Fine teeth on the forward end of the blade start the cut as easily as the feed screw of an auger bit starts boring. You won't have to scrape and scratch — and you can cut precisely at the exact mark—at any angle. This blade is the greatest improvement yet made in hack saws, and it is designed especially for electricians. Buy them at the same price as an ordinary blade.

Use the 24/36 tooth for BX, wire mold, conduit, etc. Use the 18/36 tooth for heavy conduit.

Ask your electrical wholesaler today or write to

**The HENRY G. THOMPSON
& SON CO.**

Est. 1876

New Haven, Conn.

NEWS MANUFACTURERS

A DEPARTMENT FOR THE ANNOUNCEMENT OF ACTIVITIES OF MANUFACTURERS THAT ARE OF INTEREST TO CONTRACTORS, SUCH AS CHANGES IN EXECUTIVE PERSONNEL, BRANCH OFFICES, NEW PRODUCTS, ETC.

BETTER BUSINESS SEEN BY SWOPE

According to a statement recently issued by Gerard Swope, president of the General Electric Company, Schenectady, N. Y., the outlook for 1932 in the electrical industry should be equally as good in 1932 as in 1931, with a gradual increase in the electrical manufacturing business.

Mr. Swope further stated that "the electrical industry is in a peculiarly fortunate position, for even in the past year there has been an increased consumption of electricity in the homes, mainly because of the installation of a greater variety of electrical appliances. In this year, also industrial companies have modernized their productive methods, requiring new applications of electricity."

NEW MARKING FOR LEADED ARMORED CABLE

Leaded type armored cable (type ACL) will be marked by having the word "lead" or "leaded" embossed or indented in the armor, according to the new requirements of the Underwriters' Laboratories for marking armored cable.

HOWARD R. SARGENT

Howard R. Sargent, engineer of the commercial engineering division of the merchandise department of the General Electric Company, Bridgeport, Conn., died December 8 following an attack of appendicitis.

Mr. Sargent was born at Newton, Mass., and graduated from Massachusetts Institute of Technology in 1893. He entered the service of the old Thomson-Houston Co. at Lynn, Mass., until 1894, when he was transferred to Schenectady, at which time

Schenectady was made the home office of the General Electric Co.

When the merchandise department of the company was organized in 1922, Mr. Sargent was transferred to Bridgeport as manager of the wiring supplies engineering division, and entered the merchandise department in 1923.

For many years Mr. Sargent has contributed greatly to the work of revising the National Electrical Code.

CHANGES IN SQUARE D PERSONNEL

C. Lewis Hull, sales manager, switch and panel division of the Square D Co., Detroit, Mich., announces the appointment of C. W. Bates, formerly Chicago branch manager of the company, as assistant sales manager with headquarters in Detroit.

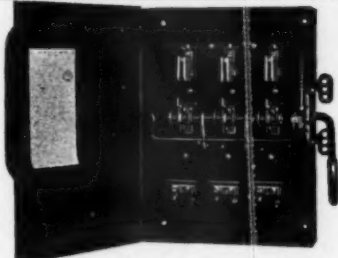
G. S. Blomgren of the Chicago office succeeds Mr. Bates as Chicago branch manager.

CORRECTION

The advertisement of the Appleton Electric Company appearing on page 50 of the December, 1931, issue, shows an installation of Appleton No-Thread malleable Unilets in the press rooms of the Chicago Daily News, and through an oversight proper recognition was not given to the electrical contractors, who in this instance were the White City Electric Co., 14 No. Franklin St., Chicago, Ill.

National Time & Signal Corp., Detroit, Mich., has moved its general offices and factory to 600 East Milwaukee Ave., Detroit.

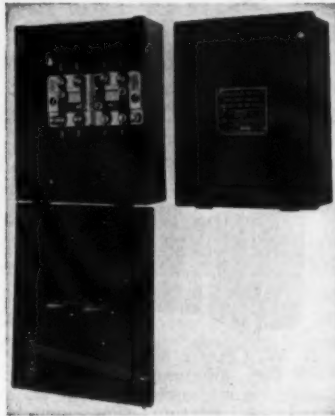
New Electrical Products



The Square D Co., Detroit, Mich., announces four major improvements in the Type A safety switch as follows: Compact interlocking mechanism giving ample wiring space on both sides of switch, as well as top and bottom; interlock controlled by key, but it may be disabled with a screwdriver slipped into slot for operation of switch when door is open; has positive pressure, high conductivity copper with steel spring reinforcement fuse clips; has wider, longer and stronger dust shields and a slotted hexagon terminal nut on switches of 100 amp. capacity or less, enabling electrician to use a screwdriver, wrench or pliers.



The Sangamo Electric Co., Springfield, Ill., announces a moderately priced, electrically wound, time switch, complete with contact mechanism and moulded bakelite connection block, mounted in a pressed steel case with pryouts in the bottom and back for $\frac{3}{4}$ and $\frac{1}{2}$ in. conduit. Standard switch has levers for 3 complete daily operations. Main spring is kept wound by a constant speed a.c. motor. Unit also has a jeweled balance with non-magnetic, non-rusting, temperature compensating, special alloy hairspring. Entire timing and winding mechanism is enclosed in a dust-proof case. One of the unique features of this switch is the type of mechanical contact which is being introduced in this country, after being used successfully abroad for many years. This new contact has a slow opening and a small gap.

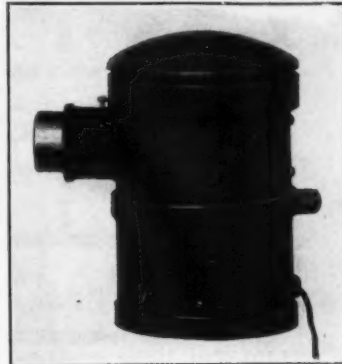


The "Code" type meter connection block is announced by the Code Electric Products Corporation, 1341 Glenwood Ave., Philadelphia. Size of box is 10 in. high, 8 in. wide and $3\frac{1}{4}$ in. deep, and has convertible meter end plate to permit changes of different size meters. Shifting of one nut disconnects meter and connects line and load side of test block without breaking circuit. There is only one connection between line and meter. Construction of box does not permit closing of lid if nut which shorts the line and load together is left in wrong position. One lock is used to lock both sides and top cover of lid.

The Stanley Works, New Britain, Conn., announces "Stanleymagic" self-opening service doors, photo electrically controlled. Unit is furnished complete with one pair light weight rigid doors, bound with aluminum channels, 3 pairs of ball bearing butts secured to steel reinforcing plate inside of doors; a General Electric photo-electric control with light ray and a mechanical operator. Doors open in half a second. Person approaching door intercepts an invisible ray of light. Unit is specially designed for use between dining room and kitchen in hotels and restaurants.



The Ralco Mfg. Co., Chicago, Ill., has placed on the market a line of junction boxes and unions for use in hazardous places as described in Article 32, Class 1 and 2 locations, Group D and G, 1931 Code rules. The unit shown above is for gasoline pump connection.



Complete, ready-to-use light relay and light source units are announced by the Radioviser Division of Burgess Battery Co., New York City. Units are designed around the Burgess Radiovisor Bridge or light-sensitive cell, and are available in both a.c. and d.c. models. Units are in form of aluminum housing with window, containing circular platform on which bridge, tubes and other components are mounted, the housing being held by wall bracket ring. A.c. unit comprises bridge, two 427 type tubes, power transformer, filter condenser, resistors, by-pass condensers and power relay. D.c. unit comprises bridge, one 427 type tube, voltage reducing and other resistors, by-pass condenser and power relay. As companion equipment, Burgess light source units are available in a.c. and d.c. models, each unit containing a 12-volt, 21-candlepower bulb and focusing optical system to concentrate light beam on light-sensitive surface of light relay unit.

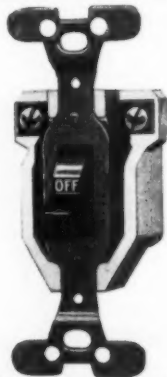


Wheeler Reflector Co., Boston, Mass., announces portable floodlights which can be mounted on pipe, walls, in the ground, on roofs, etc., available in three sizes, accommodating 75 or 100, 150 or 200 and 300 or 500 watt lamps. Reflector is adjustable to any degree, vertically or horizontally. Units are equipped with spikes for ground mounting, and units are ready-wired with socket, service cord and plug for immediate installation.

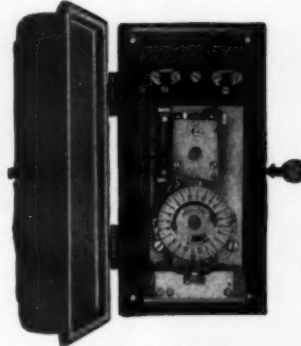
New Electrical Products



A 75-100-Watt Junior floodlight is announced by Benjamin Electric Mfg. Co., Des Plaines, Ill. The reflector is of symmetrical shape, finished inside with white porcelain enamel. The overall finish is olive green. Interior of unit is sealed by a moulded plain glass cover and special gasket held in place by metal retaining band. Unit has a removable spike extending 6 in. below floodlight base for ground mounting and has 3 screw slots in base for solid surface attachment. Unit also has a 4 ft. rubber covered extension cord with standard parallel blade plug cap. Universal adjustment is provided which permits unit to be placed in any horizontal or vertical position.



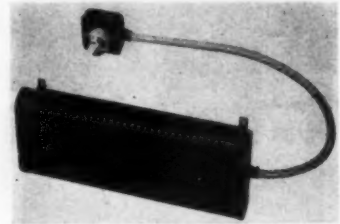
A single pole, toggle flush switch, Catalog No. 7200, is announced by Cutler-Hammer, Inc., Milwaukee, Wis. The switching mechanism is of the "jumper" type (a new C-H design), with heavy phosphor bronze contact material, non-stubbing contacts, compression type spring to give quick make and break, a positive-acting "kick-off" feature to eliminate burning and pitting of contacts, and an arc horn on movable contact which confines arc to the extreme tip of contact. The stationary contacts and terminals are of one piece phosphor bronze and both terminals are at one end of switch. Unit has porcelain body, rigid plaster lugs and is furnished with either black or brown operating lever.



R. W. Cramer & Co., Inc., New York City, announces a low-priced Sauter synchronous motor, slow speed, self-starting time switch, equipped with laminated brush type copper contacts with silver arcing tips, quick-make and break and furnished in 2, 10, 15 and 25 amp. capacities for 110/220 volts. Synchronous motor is for use on 110 volt, 60 cycle. Unit is mounted in a pressed-steel housing with knock-outs for conduit connections and contains time tested units. It may be had with an astronomic dial to automatically control operating time in step with change of sunset and sunrise throughout the year. A standard spring driven clock can be interchanged with another self-starting synchronous motor clock designed for this purpose.



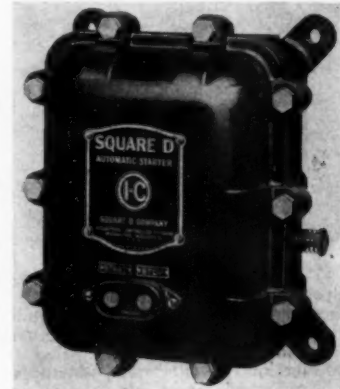
Appleton Electric Co., Chicago, Ill., announces the "GRU" and "GRUY" series of Unilets, for use in hazardous locations. Unilet body is made of malleable iron; the covers are cast brass; all metal to metal joints are machined and no gaskets are required. This construction classifies this series of Unilets as explosion resisting fittings, making them acceptable in locations where inflammable volatile liquids, highly inflammable gases, etc., are used, and also locations in which combustible dust is present in sufficient quantities to produce explosive mixtures, such as in flour mills, grain elevators, etc. Unilets can also be furnished complete with either rotary or toggle switches.



General Electric Co., Schenectady, N. Y., announces a line of horizontal electric air heaters for industrial applications. Heaters consist of a number of General Electric strip heaters mounted in black japanned, perforated, pressed steel cases, each equipped with three feet of armored cable and a 3-heat snap switch mounted on a standard conduit box. They are designed for wall or floor mounting.



Clemson Bros., Inc., Middletown, N. Y., announces the Star Molybdenum heavy duty hacksaw blade colored in copper bronze. Molybdenum is an American mined metal, which it is stated produces a tougher and sharper blade than other alloys used in hacksaw blades.



The Industrial Controller Division of Square D Co., Milwaukee, Wis., announces Class 8532, Types AR-1 and BR-1 explosion proof starters with maximum ratings of 1½ h.p., 110 volt, 3 h.p., 220 volt, single phase; 5 h.p., 220 volt, 7½ h.p., 440-550 volt polyphase. Type AR-1 has a "start-stop" push button in cover while type BR-1 is designed for remote control. Starter mechanism consists of a 3-pole magnetic contactor and thermal overload relays mounted on a porcelain base. An explosion proof cast iron enclosure surrounds starter.

For Quick Accurate Hole Cutting

Jiffy Adjustable Cutter

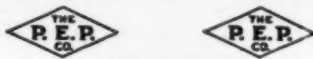
Box Cutter

Cuts perfect round holes from $\frac{3}{4}$ " to 6" in diameter quickly and easily in sheet metal iron or steel up to $\frac{3}{4}$ " in thickness.

No manual pressure necessary, spring exerts the pressure.

Ask for information on complete line.

PAUL W. KOCH & CO.
20 N. WACKER DRIVE CHICAGO
Established 1912



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THE PLAINVILLE ELECTRICAL PRODUCTS CO.

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Write for Copy of Catalogue

"STANDARDIZE ON STANDARD TRANSFORMERS"

ALL TYPES
Indoor and Outdoor Service

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WARREN, OHIO

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By reading these pages you will acquaint yourself with what is newest and best in electrical supplies and equipment. When communicating with an advertiser mention

Electrical Contracting

NEW CURTIS HANDBOOK ON LIGHTING

"Planned Lighting" is the title of a new 28-page handbook published by Curtis Lighting, Inc., Chicago.

This handbook, which is divided into sections featuring "Panel and Recessed Lighting"; "Cove Lighting"; "Lighting from Artificial Skylights"; "Lighting from Pedestals, Reflector Lamps, Wall Urns"; "Lighting from Luminaires"; "Curti-Strip and Light-Strip"; "Floodlighting"; "Show Window and Show Case Lighting"; "Interior Floodlighting"; "Lighting for Stock Quotation Boards"; "Interior Athletic Courts"; "Industrial Lighting"; together with a complete "Layout for Flush Mounting Ceiling Type Units," is complete with detailed sketches and data on wattage capacities and how to plan lighting for these various problems.

G. E. LIGHTING INSTITUTE AT HARRISON DISCONTINUED

The General Electric Lighting Institute, Harrison, N. J., closed on December 15, following the acquisition of the New York Electrical Institute in Grand Central Palace by the New York Electrical Association, of which General Electric Co. is a contributing member.

The eastern office of the Nela Park Engineering Department with A. L. Powell in charge, will be located in New York City. Mr. Powell was formerly located at Harrison, N. J.

Wagner Electric Corp., St. Louis, Mo., has issued Bulletin 167, entitled "Small Motors" which is in loose-leaf form. The bulletin is divided into eight parts describing single-phase, polyphase and d.c. motors in fractional horse-power ratings, and is completely illustrated. At present only five of the eight parts are available, but the other three parts will be ready within a very short time.

A bulletin describing slip-ring induction polyphase motors, 3 and 2 phase, constant and adjustable varying speed, has been published by Century Electric Company, St. Louis, Mo.

Paul C. Schmitt, formerly purchasing agent for Edwin F. Guth Co., St. Louis, has opened offices under the name of Paul C. Schmitt Co., manufacturers' agent, 5511 Lisette Ave., St. Louis, Mo.



Bending



the pipe is made to bend easily. Try it yourself.

Smooth Interior . .



free from burrs, fishing wire slides right through.

Clean Sharp Threads



with protection on them, they are electro-galvanized.

These are some of the reasons why you can save time and money with "GALVADUCT" Rigid Steel Conduit.

GARLAND MFG. CO.
PITTSBURGH, PENNA.

IT'S PORTABLE

Carry the Martin Vise Stand and Pipe Bender with you . . . anywhere; set it up in one-half minute. Will not skid or tilt. A genuine TIME SAVER for cutting or threading conduit up to 2 1/2". Bending capacity 3/4". Write to



H. P. MARTIN & SONS
800 W. 12th St.
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MARTIN
VISE STAND AND PIPE BENDER

LEARN MODERN

electrical construction
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NEW WAY

Thorough and practical method
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**Quality
that has been
a by-word
with
electrical
contractors
for 29 years!**

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**Specify Alphaduct and
SX to your jobbers
salesman the next time
he calls.**

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SX SHEATHED CABLE



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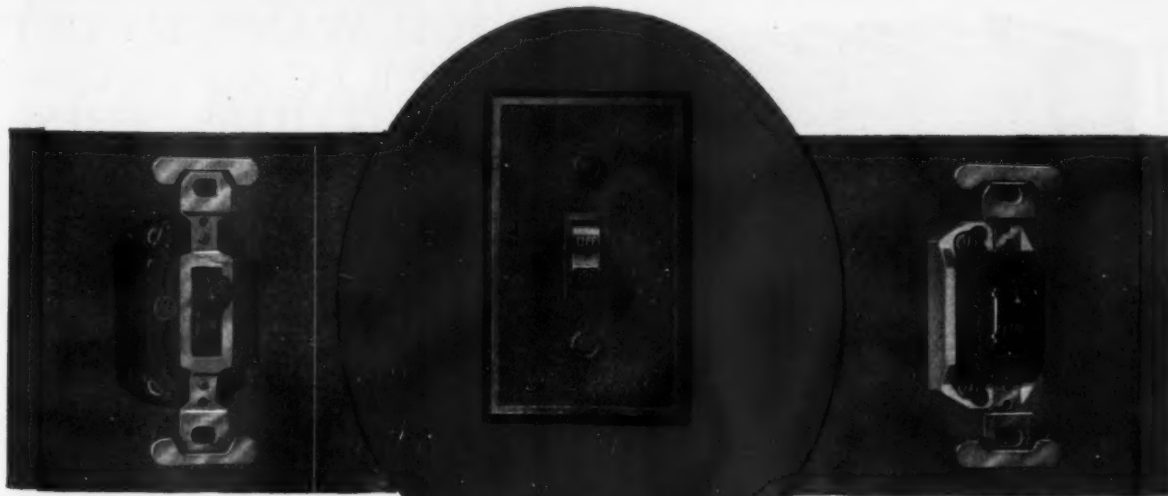
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G-E FLUSH TUMBLER SWITCHES

for Every Requirement

General Electric offers you flush tumbler switches for every requirement whether it is for new construction, remodelling or replacement. A complete line of competitively priced and extra quality switches in porcelain or totally enclosed switch boxes — Brown Textolite handles with “on” and “off” indication — large binding screws for No. 12 wire — wide mounting ears. Easier to install, they reduce installation costs.

The construction of the totally enclosed compound switch box seals

in the mechanism preventing accidental injury or the introduction of foreign matter in the course of installation.

These switches have a reputation for ruggedness, dependability and long service, and will give your customers lasting satisfaction.

Your nearest G-E Merchandise Distributor can supply you with G-E flush tumbler switches and Textolite flush plates, or write Section D-321, Merchandise Department, General Electric Company, Bridgeport, Conn.

Use G-E Textolite plates with G-E flush tumbler switches.

GENERAL ELECTRIC

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MERCHANDISE DEPARTMENT, GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONNECTICUT



IF YOU WANT TO GET ELECTRICAL CONTRACTING JOBS THESE DAYS...

YOU MUST BE PREPARED TO TACKLE ANY JOB THAT COMES ALONG. ANY CONTRACT IS A GOOD CONTRACT NOW.

The pickings are easy no longer—in fact they are mighty poor. Only those contractors who are keeping ahead of the parade, who are constantly expanding their knowledge about their own business, are the ones who are looking forward to 1932 with much hope.

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(6 volumes—over 2,000 pages—fully illustrated)

Six well-bound, handy volumes make up this library. They are: 1. Conduit Wiring. 2. Alternating Current Armature Wiring. 3. Electrical Machinery and Control Diagrams. 4. Lighting Circuits and Switches. 5. Circuit troubles and Testing. 6. Electrical Machinery Erection.

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There are more than 1,000 clear, easy to follow diagrams in these six books. The wiring instructions are in simple language.

Like other Terrell Croft books—these books are prepared for use by practical electricians.

GENERAL

They show how to make installations for every type of conduit wiring—they tell how to handle every kind of lighting and switch problem—they give tips on short cuts for saving time on routine jobs—they show the quickest and surest methods of locating and remedying circuit troubles. In short, they give you the "how" and the "why" of every job you are ever likely to be called upon to tackle.

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The man who is getting business and holding his own today is the man who knows more about his job than the next fellow. Here is your chance.

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If you act now



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Terrell Croft has been through the mill of practical experience. He started at the bottom as an electrical helper and worked his way up the ladder of success until today he ranks among the few consulting engineers who are known the country over. He writes the kind of books he wishes he had had when he was on the way up—helpful, informative, practical, and easy to understand. It is because he has done the work himself that you will gain so much from these Croft books.

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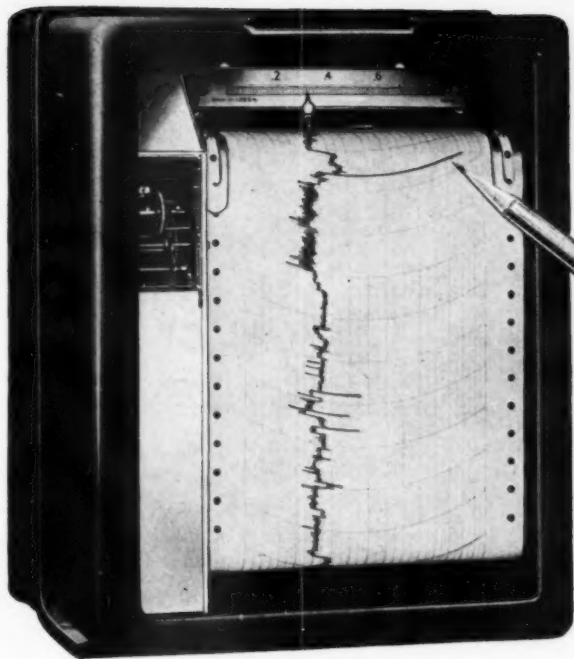
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HARMLESS
OVERLOADS**

But

**....YOU CAN FORTIFY YOUR PLANT
AGAINST NEEDLESS SHUTDOWNS
BY USING A MODERN FUSE**

NO longer need troublesome current surges be the bug-a-boo of the production or operating man. No longer need useless blowing of fuses cause excessive fuse bills. No longer need machines stall and operators stand idle.

Here at last is a fuse that blows promptly to protect equipment—yet has so long a time-lag that it carries easily many of the annoying current surges that so frequently cause old-fashion fuses to blow.

This remarkable result is obtained in BUSS SUPER-LAG Fuses through the use of "lag-plates" attached to the links. These lag plates give the fuse a time-lag far in excess of anything heretofore thought possible. Due to this super long time-lag the fuse will safely carry many of the temporary or harmless overloads that occur on all electrical circuits—yet will blow promptly to protect equipment when a dangerous overload or short circuit occurs.

Why Not Get The Whole Story?

Why not inform yourself about this latest invention in Electrical Protection? We can have a representative call or send complete data by mail—just state your preference.

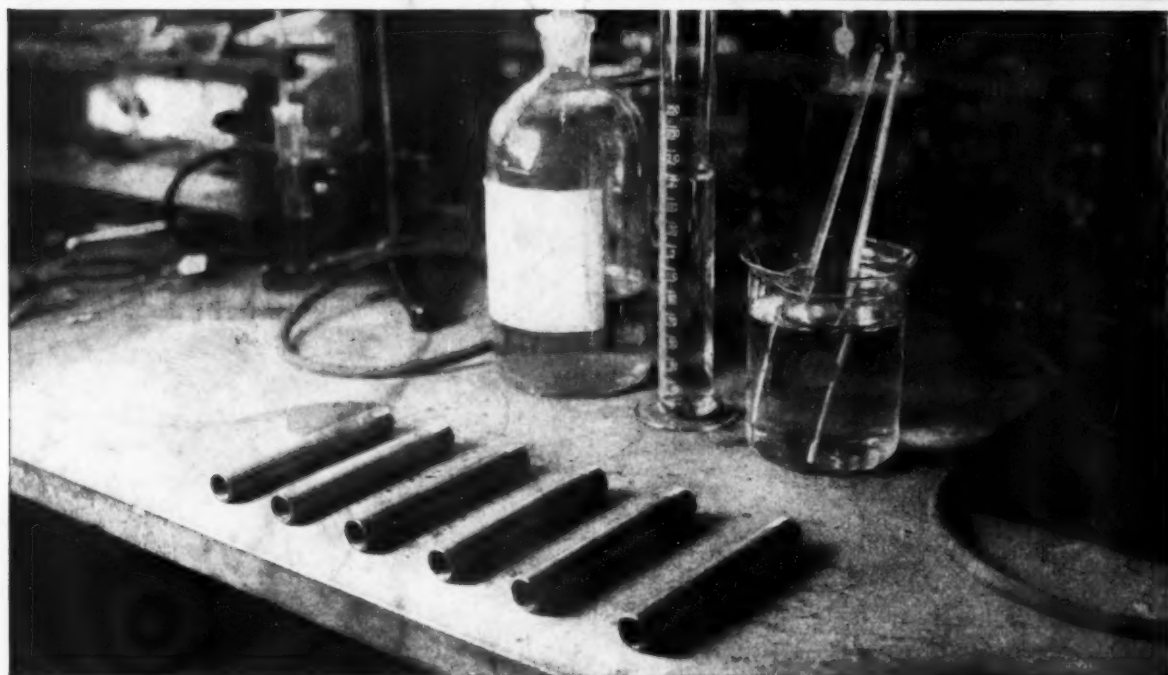


Note the "lag-plates". They are what makes the difference.

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A Division of the McGraw Electric Company

THE BUSS SUPER-LAG FUSE



WHICH RIGID CONDUIT IS BEST?

Important developments in the manufacture of G-E WHITE rigid conduit during the last year or two have changed the standards by which conduit is bought today. Price is no longer the only factor in the choice of brands. Now careful buyers ask these three searching questions before selecting conduit:

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You can save yourself trouble by using G-E rigid conduit because it is made of a flexible alloy steel that is easier to bend and thread. Its greater workability makes installation easier.

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For years waterpipe, fencewire, and other articles built for severe conditions have been protected by hot-dipped galvanizing because it is the best commercial method known for protecting iron and steel against rust and corrosion.

3. *What kind of a super-coating has it?*

G-E WHITE has a coating of Glyptal, the super-coating developed in the G-E Research Laboratories. All ordinary coatings were discarded in favor of Glyptal because of its remarkable flexibility, adhesiveness, and resistance to water, oil, acids, and alkalis. The Glyptal coating prolongs the life of G-E WHITE for many years and also helps to give the interior of the conduit a glass-like smoothness that makes wires pull easier.

Ask your nearest G-E Merchandise Distributor for G-E WHITE, or write to section C-321, Merchandise Department, General Electric Co., Bridgeport, Conn.

GENERAL ELECTRIC

RIGID CONDUIT

MERCHANDISE DEPARTMENT, GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONNECTICUT



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Wholesaler	Contractor	Retailer
ECONOMIZE		
A. Eliminate Unnecessary Duplication of Lines <ol style="list-style-type: none"> 1. They create waste, lead to confusion. Do not permit effective selling. 2. Pushing single lines makes your account worthwhile to the manufacturer and makes for sale effectiveness. B. Discontinue Obviously Obsolete Numbers in all Lines <ol style="list-style-type: none"> 1. Through stock control and close inspection of inventory. 2. Will help reduce cost of doing business for your entire industry and help manufacturers. 3. Reduces your inventory losses. C. Observe Stricter Credit Policy <ol style="list-style-type: none"> 1. Results in better contractors and retailers. 2. Reduces your losses. 3. Cuts down number of retailers and contractors entering the business with insufficient funds. 4. Builds respect for your institution. D. Delivery Policy Corrections <ol style="list-style-type: none"> 1. Charge for delivery of small orders. 2. Set up a free delivery zone with customers paying for delivery beyond that zone. 3. Investigate possibilities of cooperative or exchange deliveries with other firms in your territory. 	A. Concentrate Purchases <ol style="list-style-type: none"> 1. With responsible houses. <ol style="list-style-type: none"> A. Saves purchasing time, minimizes stock, only one bill to worry about, makes your account worthwhile. 2. Select a quality and repeat its use. B. Use Only Modern Methods <ol style="list-style-type: none"> 1. Replace old equipment whenever possible with modern. 2. When you have to use obsolete materials order only sufficient to do job. 3. Insist on your men using modern labor-saving tools. C. Improve Your Credit <ol style="list-style-type: none"> 1. Install an adequate accounting system. 2. Take all cash discounts. 3. Be sure of the credit of your customers. 4. Budget expenses. 5. Insist that your wholesaler adheres to strict credit control. D. Place Complete Orders <ol style="list-style-type: none"> 1. Make out complete material schedule with deliveries and give it to wholesaler at one time for delivery to job thereby saving time and errors. 2. Ordering in very small quantities is result of carelessness and forgetfulness and is very costly generally because men and truck must pick it up. 3. Carry emergency stocks. 	A. Sell Accepted Merchandise <ol style="list-style-type: none"> 1. Takes you out of price class. 2. Builds good will for your store moves faster. 3. Concentrate purchases through tributors. B. Adequate Stock Control <ol style="list-style-type: none"> 1. Less money tied up in shelf ware. 2. Increases turn-over and simplifies. 3. Permits regular clearances of stock. C. Take Cash Discounts <ol style="list-style-type: none"> 1. Consult your distributor credit. 2. Budget your expenses. 3. Hire less but more efficient help. 4. Follow collections through a del. 5. Obtain adequate down payment sales. D. Avoid Costly Purchases <ol style="list-style-type: none"> 1. Recognize waste in placing orders. 2. Recognize danger in over buying lower price.
LOCALIZE		
E. Determine Limits of Economic Territory <ol style="list-style-type: none"> 1. Serving too large a territory costs you money and weakens your service where it should be best. 2. Create a map of your effective territory to present to manufacturers for their guidance. F. Market Analysis <ol style="list-style-type: none"> 1. Try to develop adequate knowledge of your market. <ol style="list-style-type: none"> A. Contractors B. Retailers 	E. Develop a Local Reputation <ol style="list-style-type: none"> 1. Through thoroughness of work and systematic re-inspection of completed jobs. 2. Locate your place of business where people can find it readily. F. Survey Business Sources <ol style="list-style-type: none"> 1. Determine possibilities in <ol style="list-style-type: none"> A. New building installations B. Rewiring C. Specialization. 	E. Know Your Location Possibilities <ol style="list-style-type: none"> 1. Determine whether you can sell or specialty merchandise from in your windows and in your ad. 2. Know the character of the pe vicinity or community. F. Study Business Sources <ol style="list-style-type: none"> 1. Build prospect lists from avail such as <ol style="list-style-type: none"> A. Weddings, graduations and b B. New arrivals in neighborhoo

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Co-ordinated Selling Accepted by the Electrical Industry

	Manufacturer	Industry	Consumer
<p>Handise</p> <p>ss.</p> <p>store and actually</p> <p>rough fewer dis-</p> <p>ontrol System</p> <p>warmers.</p> <p>plifies purchasing.</p> <p>of slow moving</p> <p>edit manager.</p> <p>help.</p> <p>a definite system.</p> <p>payments on time</p> <p>ases</p> <p>ng of too small</p> <p>uying for possible</p>	<p>A. Practice Selective Distribution</p> <ol style="list-style-type: none"> 1. Possibly a revision of the number of wholesalers handling your line will give you fewer, but better outlets. It will reduce cost of selling, servicing and handling. 2. It makes possible increases in sales through the more effective transmission of ideas about your product. 3. Attempt to shape distribution along lines of marketing effectiveness. 4. By making savings and profits, you can fortify your position with systematic publicity. <p>B. Reduce Obsolete Numbers</p> <ol style="list-style-type: none"> 1. Dropping of obsolete numbers saves you money in handling, producing and selling. 2. It simplifies the line, reduces the investment. 3. Giving distributors advance notice of change in styles or numbers reduces obsolescence and builds good will for you. <p>C. Establish Credit Policy</p> <ol style="list-style-type: none"> 1. By insisting that your credit terms be met promptly, the distributor is forced to do likewise with his trade. This will benefit the industry and avoid loss to you. Here is another source of saving for you—another source of revenue for building a more secure future via regular publicity. <p>D. Changes in Service Policy</p> <ol style="list-style-type: none"> 1. Consider the establishment of repair and service routine fitting distribution needs. 2. When you discontinue to handle without extra charge broken package lots, orders less than minimum amounts, direct shipments, you strengthen your distributor's position. 3. With the distributor in a better economic position he can render more effective sales service for you, thus once more building new economies and better profits which will provide funds for consistent publicity efforts. 	<p>A. The Policy of Economy Will Help Industrial Consumers</p> <ol style="list-style-type: none"> 1. To buy with greater confidence and know that products are of good quality at fair prices. 2. To standardize on these products and thus simplify purchasing, maintenance and operation. 3. To eliminate obsolete equipment without expansion of production capacity. 4. To buy from financially sound distributors and manufacturers. 5. Eventually to get better prices. 	<p>A. The Policy of Economy Will Help Consumers</p> <ol style="list-style-type: none"> 1. To buy with confidence and know that products are of good quality at fair prices. 2. To buy from financially sound contractors or retailers. 3. To shop with a knowledge that goods will be available at convenient locations. 4. To purchase on a sound credit basis. 5. To know that the price charged by the retailer or contractor does not include the wasteful expense of carrying obsolete and unsalable merchandise. 6. To believe that repairing and servicing will be satisfactorily handled. 7. Eventually to get better prices.
<p>a Possibilities</p> <p>n sell convenience</p> <p>rom test displays</p> <p>ur advertising.</p> <p>ne people in your</p> <p>es</p> <p>available sources</p> <p>and births.</p> <p>orhood.</p>	<p>E. Use a Trading Area Scheme of Selling</p> <ol style="list-style-type: none"> 1. Insist upon your distributors furnishing you with maps showing their effective areas of service. Build a general sales scheme that covers all of the trading areas. Make this scheme the control of your advertising. <p>F. Help in Market Determination and Analysis</p> <ol style="list-style-type: none"> 1. Supply wholesaler with assistance in analyzing his market on your lines. Deliver the points developed in your market analysis to 	<p>E. The Policy of Localization Will Help Industrial Consumers</p> <ol style="list-style-type: none"> 1. To secure more efficient delivery service. 2. To consolidate your purchases with local businesses with safety. 3. To secure more consistent service from salesmen, engineers and repair men of local firms. 	<p>E. The Policy of Localization Will Help Consumers</p> <ol style="list-style-type: none"> 1. To become better acquainted with local retailers and contractors. 2. To secure fair and more efficient delivery service. 3. To concentrate purchases locally with confidence. 4. To secure more consistent service from salesmen and re-

4. Builds respect for your institution.

D. Delivery Policy Corrections

1. Charge for delivery of small orders.
2. Set up a free delivery zone with customers paying for delivery beyond that zone.
3. Investigate possibilities of cooperative or exchange deliveries with other firms in your territory.

2. Insure that your wholesaler adheres to strict credit control.

D. Place Complete Orders

1. Make out complete material schedule with deliveries and give it to wholesaler at one time for delivery to job thereby saving time and errors.
2. Ordering in very small quantities is result of carelessness and forgetfulness and is very costly generally because men and truck must pick it up.
3. Carry emergency stocks.

3. Obtain adequate down payments on sales.

D. Avoid Costly Purchases

1. Recognize waste in placing of orders.
2. Recognize danger in over buying for lower price.

LOCALIZE

E. Determine Limits of Economic Territory

1. Serving too large a territory costs you money and weakens your service where it should be best.
2. Create a map of your effective territory to present to manufacturers for their guidance.

F. Market Analysis

1. Try to develop adequate knowledge of your market.
 - A. Contractors
 - B. Retailers
 - C. Industrial
 - D. Commercial

G. Cooperate

1. With other wholesalers
 - A. To determine and abide by agreed sales territories
 - B. To avoid ruinous price cutting
 - C. By exchange of ideas, office systems, etc.
2. With your customers
 - A. By giving sales help and encouraging co-operation in other directions.
 - B. By supplying leads.
 - C. By advising on general business problems.
3. With your local Central Station, Electric, League and other business associations.

E. Develop a Local Reputation

1. Through thoroughness of work and systematic re-inspection of completed jobs.
2. Locate your place of business where people can find it readily.

F. Survey Business Sources

1. Determine possibilities in
 - A. New building installations
 - B. Rewiring
 - C. Specialization.
2. Use readily available sources of business
 - A. Building permits
 - B. Newspaper notices.

G. Cooperate

1. With other contractors
 - A. To avoid ruinous price cutting
 - B. By exchange of ideas
 - C. Through exchange of credit information.
2. With wholesalers
 - A. By early supplying complete requirements for jobs
 - B. By limiting your purchases to a few wholesalers
3. With your local Central Station, Electric League and other business associations.

E. Know Your Location Possibilities

1. Determine whether you can sell color or specialty merchandise from test in your windows and in your advertisement.
2. Know the character of the people in your vicinity or community.

F. Study Business Sources

1. Build prospect lists from available sources such as
 - A. Weddings, graduations and births
 - B. New arrivals in neighborhood.
2. Follow up old customers
 - A. Additional sales.
 - B. Leads for new sales.

G. Cooperate

1. With other retailers
 - A. To avoid ruinous price cutting on standard appliances.
 - B. By exchange of ideas and to promote additional sales.
 - C. Through exchange of credit information and by joint delivery.
2. With wholesalers
 - A. To restrict purchases to a few wholesalers
 - B. To order in profitable quantities
 - C. To obtain selling instruction.
3. With your local Central Station, Electric League and other business associations.

H. Departmentalize in Terms of Market

1. Each division of your market needs special attention. If you are a house too small to serve four markets, single out one and specialize on that.

I. Specialty Selling

1. Lines can be grouped for each market around salesmen for that market, or you can build specialty selling on the basis of lines you carry.
2. Specialty selling builds profit.

J. Develop Sales Direction

1. Plan your selling by seasons, by territory, by salesmen.
2. Charge a fair profit in your prices and be unyielding.

H. Be a Specialist in at Least One Direction

1. Through specializing in one direction it is possible to build up a reputation in that field and it gives you the opportunity of securing business on a non-competitive basis. Even though you specialize, it is not necessary to turn aside other business.

I. Draw Specialty Sales Data from Your Distributors

1. Your distributors will assist you in becoming a specialist.
2. Draw sales data and suggestions from their organizations.
3. Read trade journals and manufacturers' pamphlets.

J. Sell Safety and Convenience

1. Build your sales story in soliciting business around your ability to do the best kind of a job. Make customers feel that you know more about the job than anyone else, thereby eliciting orders.

H. Departmentalize in Terms of Product

1. Make your store arrangement an available one on the part of your customers. For example a department for lamps and one for small cooking appliances and large labor saving devices.
2. Arrange window displays or one product related group of products.

I. Develop Specialty Selling

1. Each major appliance should have a particular plan of promotion
 - A. Try store demonstration and events. Try outside house to house demonstration with home demonstration special windows with definite theme.

J. Sell Utility

1. In your windows, in your advertisement, your clerks—sell the usefulness, and convenience rather than price.

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source of revenue for building a more secure future via regular publicity.

D. Changes in Service Policy

1. Consider the establishment of repair and service routine fitting distribution needs.
2. When you discontinue to handle without extra charge broken package lots, orders less than minimum amounts, direct shipments, you strengthen your distributor's position.
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1. Supply wholesaler with assistance in analyzing his market on your lines. Deliver the points developed in your market analysis to your customers in your monthly advertising so that all will learn to what extent your products can be used or sold.

G. Cooperate With Other Distributive Agencies

1. Cooperate by educating wholesalers, contractors, retailers and central stations to the value of E.L.S.A. Cooperate with these distributive agencies to the end of selling more for you and rendering better and more economical service to the consumer.

E. The Policy of Localization Will Help Industrial Consumers

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H. Foster Industry Specialty Selling on Your Lines

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1. Get your sales department to advocate specialty selling on your line. Publish detail data on your products in your trade paper advertising, thus making this advertising an instrument of help for specialty selling.

J. Sell By Plan

1. Through advocating the industry needs, create economies from which you will benefit. By selling on a plan that incorporates these

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2. By making it easier, quicker and more pleasant to shop.

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 - B. By supplying leads.
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E. Know Your Location

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1. Build prospect lists from
 - A. Weddings, graduations and
 - B. New arrivals in neighborhood.
2. Follow up old customers
 - A. Additional sales.
 - B. Leads for new sales.

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1. With other retailers
 - A. To avoid ruinous price cutting on standard appliances.
 - B. By exchange of ideas and additional sales.
 - C. Through exchange of credit and by joint delivery.
2. With wholesalers
 - A. To restrict purchases to a few
 - B. To order in profitable quantities
 - C. To obtain selling instructions
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1. Lines can be grouped for each market around salesmen for that market, or you can build specialty selling on the basis of lines you carry.
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H. Departmentalize in Product

1. Make your store arrangement able one on the part of your example a department for large one for small cooking appliances large labor saving devices.
2. Arrange window displays on related group of products.

I. Develop Specialty Sales

1. Each major appliance should have a particular plan of promotion
 - A. Try store demonstration events. Try outside house demonstration with home demonstration special windows with displays.

J. Sell Utility

1. In your windows, in your store, your clerks—sell the usefulness and convenience rather than the price.
2. Train your repair men in selling them on lookout for new leads.

K. Systematize Your Publicity

1. Support your salesmen with regular monthly mail to your customers.
2. Use manufacturers' sales helps.
3. Follow unified publicity program as published in ELECTRICAL WHOLESALING.
4. Tie up your publicity with that of manufacturers.

K. Advertise Your Specialty

1. Advertise your special ability to handle a particular type of work.
2. Systematically use manufacturers' sales helps.
3. Tie up with manufacturers' national advertising in your local newspaper.
4. Build a mailing list and make regular mailings.

K. Advertise Your Service

1. Systematically use manufacturers' sales helps.
2. Tie up with the manufacturers' advertising in your local newspaper.
3. Build a mailing list and make regular mailings. Add to mailing list births, weddings, graduations.
4. Develop an advertising theme such as economy, quality, service.

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3. With the distributor in a better economic position he can render more effective sales service for you, thus once more building new economies and better profits which will provide funds for consistent publicity efforts.

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1. Get your sales department to advocate specialty selling on your line. Publish detail data on your products in your trade paper advertising, thus making this advertising an instrument of help for specialty selling.

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1. Through advocating the industry needs, create economies from which you will benefit. By selling on a plan that incorporates these industry needs, you will build a secure future for your company and your product.

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1. To receive more expert and reliable salesmen and sales engineers.
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H. The Policy of Specialization Will Help Consumers

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ADVERTISE

Service

manufacturers' sales helps.
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and make regular mail-
g list from records of
duations, new arrivals.
g theme for your store,
ality, comfort, style.

K. Advertise Your Plan and its Advantages

1. Talk quality, advertise quality, picture the advantages to be gained in selling or using your product. Show the industry how easy profits can be made through the use of a positive story about your product.

K. The Policy of Advertising Will Help Industrial Consumers

1. To keep informed of equipment, materials and costs.
2. To learn how these products can aid you in the solution of your problems.

K. The Policy of Advertising Will Help the Consumer

1. To keep informed on new devices, costs and sales.
2. By suggesting gifts, prizes, etc., for special occasions.